Neousys Digital Signage Players Deliver Multi-Display Configurability, Rich 4K Multimedia and AI Inference – In a Fanless Design – with Help from AMD Ryzen™ Embedded V1000 Processors

Nuvo-2700DS series digital signage players support breakthrough capabilities in a sleek, compact form factor, balancing processing performance and thermal agility.

AMD RYZEN EMBEDDED

CUSTOMER

NEOUSYS TECHNOLOGY

APPLICATION

Digital Signage

CHALLENGES

Neousys sought to design a richly functional digital signage system that brings together advanced capabilities like multi-display support, 4K multimedia playback, and AI inference. The system needed to be ruggedized for harsh environments, which required a fanless design – a difficult challenge with so much computing and graphics performance hosted within the system.

SOLUTION

Nuvo-2700DS series digital signage players leverage AMD Ryzen™ Embedded V1000 processors to enable robust, high performance graphics features, including multi-display configurability and rich 4K multimedia support. These power efficient SOCs equipped Neousys' design team to achieve a thermally optimized design that allows for two additional TPUs within the system for AI inference apps.

RESULTS

For 24/7 digital signage installations and mobile, in-vehicle signage applications, Neousys' rugged Nuvo-2700DS players deliver sophisticated capabilities in a sleek, fanless system that's well suited for use in challenging environmental conditions.

AMD TECHNOLOGY AT A GLANCE

AMD Ryzen™ Embedded V1000 Processors

Neousys Technology Inc, founded in 2010, has focused its innovation on designing and manufacturing rugged embedded platforms and modules that deliver advanced computing capabilities and versatile, high-performance graphics performance in ultra-compact footprints. To achieve this, the design experts at Neousys have pioneered new and elegant approaches to power, space and thermal optimization that equip rugged Neousys systems to deliver reliable performance, even in harsh operating environments.

Neousys' systems are also known for their versatility, and the company's Nuvo-2700DS series digital signage players are designed with multiple end applications in mind. The slim, sleek and rugged design makes Nuvo-2700DS series players ideally suited for a wide range of signage and AI-assisted content displays, including 24/7 video-wall signage installations and mobile, in-vehicle advertising applications.

The systems' streamlined architecture is made possible thanks in part to AMD Ryzen™ Embedded V1000 processors, supporting a low power envelope (12-54W) that ultimately enabled a fanless design in a mere 173 mm (W) x 174 mm (D) x 50 mm (H) ventless enclosure.

Featuring AMD Ryzen™ Embedded V1605B and Neousys' exclusive thermal design, Nuvo-2700DS series digital signage players support a wide-temperature range (-25 to 70°C) with fanless operation that eliminates moving parts within the system to reduce mechanical points of failure. Nuvo-2700DS systems can capably operate amid moisture, dust and other particulates, making them ideally suited for high-traffic outdoor locations and within commercial vehicle cabins.

Nuvo-2700DS systems can provide additional compute performance via optional Google Edge TPUs (one and two TPU configurations). The TPUs can be seamlessly integrable within the fanless architecture to deliver an extreme compute boost for smart digital signage players optimized for advanced capabilities like real-time consumer interaction and quantifiable out-of-home advertising engagement.

RICH FEATURES, SMALL SIZE

Neousys' rugged Nuvo-2700DS systems offer an optimal balance of high-performance digital signage capability and multi-display versatility, with the added agility to provide AI inference, personalizing consumer experiences and audience measurement.

AMD Ryzen™ Embedded V1000 processors combine CPU and AMD Radeon® GPU graphics on a single chip, offering a best-of-both-worlds experience combining versatile CPU capabilities with graphics card-caliber performance. By foregoing a bulky onboard graphics card, Neousys' design team could meet aggressive system size goals while maintaining expansive support for multi-display configurations.

Powered by AMD Ryzen™ Embedded V1605B processors, Nuvo-2700DS systems can output to up to four 4K displays and playback 4K H.265 videos at 60fps. AMD Eyefinity technology enables Nuvo-2700DS support for 4-monitor splicing to display 8K content via 4 DP outputs. The system also comes with two USB3.1 Gen1, two USB 2.0, COM ports, and optional DIO for general control purposes. By supporting two Google Edge TPUs (optional), the systems deliver a total of 8 TOPS AI inference performance in a fanless, compact form factor.

The wide operating temperature and fanless design make Nuvo-2700DS systems ideal for 24/7 applications such as flight information display systems (FIDS) or train schedule boarding displays, for example. Nuvo-2700DS systems can also be deployed for mobile applications – including in-vehicle signage and advertising – due to the inclusion of ignition power control and full bandwidth support of WIFI 6, 4G LTE, and 5G network modules.

FIGURE 1: Nuvo-2700DS Series

The support of two Google Edge TPUs empower Nuvo-2700DS as a smart digital signage player to leverage real-time camera inputs and AI computer vision models (e.g., YOLO-lite or PoseNet) to offer audiences an interactive and personalized experience. Additionally, the system can get to know its audience by collecting anonymous data via people counting, body gesture recognition, facial recognition, attention measurement, and emotion analysis.

The Nuvo-2700DS series signifies a new age of AI enabled digital signage players designed for harsh environments and/or mobile applications including commercial vehicles. Customers can utilize Nuvo-2700DS as a video wall player for playback to 4K ultra high definition visual displays, or deploy Nuvo-2700DS as a low power fanless Edge AI platform for emerging AI applications. With AI inference, Nuvo-2700DS creates an interactive and personalized experience, but moreover, it can quantify offline advertising campaigns like never before and offer fuller insight and engagement data for advertisers.

About Neousys

Established in 2010, Neousys Technology designs and manufactures rugged embedded industrial PCs and fanless computers. With core expertise ranging from edge computing to data acquisition and processing, its goal is to innovate and integrate feature sets into products for various vertical markets with simple and yet robust architectures. Neousys Technology offers application-oriented platforms in wide-temperature ranges and rugged embedded industrial computers, machine vision computers, edge AI GPU computing platforms, In-vehicle fanless computers, and surveillance/video analytics computer systems. For more information, visit www.neousys-tech.com.

About AMD

For more than 45 years AMD has driven innovation in high-performance computing, graphics, and visualization technologies—the building blocks for gaming, immersive platforms and the datacenter. Hundreds of millions of consumers, leading Fortune 500 businesses and cutting-edge scientific research facilities around the world rely on AMD technology daily to improve how they live, work and play. AMD employees around the world are focused on building great products that push the boundaries of what is possible. For more information about how AMD is enabling today and inspiring tomorrow, visit www.amd.com.