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Advantech MIO-5271 Fanless Core i 3.5" MI/O-Compact SBC for IoT & Intelligent Systems

April 3rd*, 2014, Munich* **–** With the rise of Internet of Things (IoT) and intelligent systems, today's applications are generating increasing volumes of data, and thus escalate demand for greater performance, high network connectivity, and smart manageability. Advantech, the global embedded platform and intelligent systems facilitator, providing solutions across multiple vertical markets through deployment of intelligent applications and services, today announced its MIO-5271 SBC in a 3.5" MI/O Extension(146 x 102 mm) form factor, based on Intel® 4th generation Core™ i5/Celeron® processors (Mobile U-series platform). It supports 1600/1333MHz DDR3L, USB 3.0, SATA up to 6Gb/s (600 MB/s), Intel® AMT 9.5 Release, and has triple independent display capability.

Advantech has developed an optimized thermal solution for MIO-5271, making fanless design possible on this kind of compact, high performance platform. MIO-5271 also has both iManager and SUSIAccess, developed by Advantech, integrated to monitor and control system operation remotely and effectively. These tools increase system reliability and provide a smarter software framework for the embedded customer, helping to speed up time-to-value for IoT & intelligent system design.

Smart & Core i Level Performance

Today's technology solutions and applications are increasingly compute-intensive, driving the need for superior performance. MIO-5271 adapts the latest microarchitecture with 64-bit, multi-core processors built on 22nm process technology. It delivers improvements in CPU processing, graphics, security capabilities, and I/O flexibility. With an upgrade to Intel® AVX 2.0, MIO-5271 shows a big enhancement in integer/matrix-based calculation abilities, with Intel® AES-NI allowing security algorithms to take advantage of hardware acceleration for data encryption and decryption. It allows system integrators to build intelligent systems more easily, with improved performance and reliability.

Complete Network and I/O Connectivity

In response to ever-increasing embedded application demands from mobile broadband networks, e.g.: video transmission for traffic or multimedia playback systems on public transport, MIO-5271 supports 2 on board GbE ports, also adds two miniPCIe slots with a SIM holder. The customer can activate WLAN and 3G/4G LTE mobile module at the same time, giving the ability to hand off between different wireless networks. This facilitates seamless integration and permits high efficiency network use. Not only that, MIO-5271 incorporates the MIOe unified connector which could extend additional interfaces, integrating DisplayPort, PCIe x1, LPC, SMBus, USB 2.0/USB 3.0, audio line-out, and power. Customers receive the best current I/O choices to meet their vertical application development needs, as well as helping them retain their specialist domain knowhow, all of which uses less development resources, and speeds time-to-market for their intelligent systems.

Outstanding Integrated Graphics

MIO-5271 is equipped with the latest-generation graphics core (Intel$^®$ HD Graphics 4000) with DXVA (full AVC/VC1/MPEG2 Hardware Acceleration), OpenGL 4.0, and DirectX 11. It provides a brand new multimedia user experience. This also increases possibilities for application development on multimedia embedded products. MIO-5271 carries various embedded display interfaces, including switching between HDMI(up to 4096 x 2304p) and DisplayPort(up to 3200 x 2000p), legacy VGA interface(up to 1920 x 1200p), 48-bit LVDS, and the next-generation embedded interface: eDP. Triple independent displays using 48-bit LVDS, VGA, HDMI/DP are also made available for any creative application.

Fanless Compact Thermal Solution of Only 24 mm

Fanless design is a very important consideration for dustproof requirements, and benefits include longer MTBF, dust-free, noiseless, and zero fan maintenance, and can be used 24/7. The special design for MIO-5271 thermal solution is a sound choice for medical, automation, military or transportation applications. Its compact 24 mm height makes it perfectly suitable for IoT and embedded systems which require both higher reliability and performance.

Designed and Verified for Reliability

Following the IEC standard, MIO-5271 uses the highest ESD protection level (contact: 8kV, non-contact 15kV) driver IC in its serial port design. MIO-5271 also features 100% solid capacitors, including Japanese polymer aluminum electrolytic capacitors for core power with small ESR and better MTBF than electrolytic capacitors, and high Tg PCB (TG-170), which keeps the PCB more stable during high temperature operation. Combined with Advantech's iManager, this provides double insurance to ensure stable operation.

Advantech iManager & SUSIAccess Provide Manageability and Security

MIO-5271 has iManager embedded; this intelligent, self-management, cross platform firmware monitors system status for problems and takes action if anything is abnormal. Additionally, MIO-5271 includes Advantech's remote management software SUSIAccess, which builds intelligent management functions into embedded computing applications, ensuring continuous system uptime, and reducing maintenance costs. SUSIAccess constantly monitors the health of multiple devices and sends out alarm notifications via e-mails and SMS messages if any abnormal situation should occur. SUSIAccess also provides other powerful utilities such as System Recovery (powered by Acronis), System Protection (powered by McAfee) and Remote KVM, for protection against and recovery of possible system faults.

MIO-5271 Product Features and Specifications:

- 3.5" MI/O-Compact series: 146 x 102 mm (5.7" x 4")
- Intel® 4th generation Core™ processors (Mobile U-series platform):
  i5 4300U 1.9 GHz / Celeron® 2980UE Dual-Core, 4MB / 2 MB Intel® Smart Cache shared among all cores
- Multiple display interface: VGA, 48-bit LVDS, HDMI/DP, DP interface from MIOe for flexible implementation (with dual or triple display combination capacity)
- Supports DDR3L-1600/1333
- HD Audio: Line in, Line out, Mic in (amplifier can be supported from MIOe interface)
- 2 x USB 3.0, and 4 x USB 2.0
- 2 x Serial-ATA ports, up to 6.0 Gb/s (600 MB/s)
- 4 COMs: 2 x RS-232 + 2 x RS-232/422/485
- 8-bit GPIO
- 1 x Full-size Mini PCIe with mSATA support + SIM holder, 1 x Half-size Mini PCIe
- Dual Gigabit Ethernet interface: Intel® i218 GbE + Intel® i210 GbE
- Extended Interface support from Unified MIOe expansion slot: DisplayPort, 1 PCIe x1, LPC, SMBus, 3 USB 2.0, HD audio line-out, 5VSB/12VSB, Power On/Reset
- Power type: $12V_{DC}\pm$ 10%, power management: ACPI supported
- Operating temperature: 0~60C
- OS: Win8, Win7, Linux support
- Advantech iManager, SUSIAccess with McAfee and Acronis

For more information about MIO-5271 or the new form factor: MI/O Extension, please contact your local sales office, or visit us on the web at:

http://www.advantech.eu/embcore/mio_extension_sbc.aspx.

What is MI/O Extension SBC?

Advantech's innovative MI/O (Multiple I/O) Extension Single Board Computer is strategically positioned between Single Board Computers (SBC) and Computer On Modules (COM). It comes equipped with flexible multiple I/O, which helps deliver easy system integration, efficient scheduling, reduces development resources, and provides system integrators with optimized solutions in a cost-effective way, while still securing domain know-how in key vertical industrial technologies.

About Embedded Core Service

Advantech Embedded Core Services offers design-in oriented services. These streamlined solutions broadly integrate embedded boards, peripheral modules and software. This dedicated focus on Embedded Design-in services fulfills electronic engineering demands at their design-in phase, and brings benefits that shorten the design and integration cycles, minimizing uncertainty and risk. www.advantech.eu/EmbCore

About Advantech

Founded in 1983, Advantech is a leader in providing trusted, innovative products, services, and solutions. Advantech offers comprehensive system integration, hardware, software, customer-centric design services, embedded systems, automation products, and global logistics support. We cooperate closely with our partners to help provide complete solutions for a wide array of applications across a diverse range of industries. Our mission is to enable an intelligent planet with Automation and Embedded Computing products and solutions that empower the development of smarter working and living. With Advantech, there is no limit to the applications and innovations our products make possible. (Corporate Website: www.advantech.eu).