Rugged panel PC survive hell conditions

Product Overview

The ARBOR ASLAN W922 IP stainless wide screen industrial panel PC, represented in Israel by TrigoPi, is a robust computing solution designed for extreme industrial environments where durability and continuous operation are critical. This panel PC addresses the challenge of maintaining reliable computing performance even under severe mechanical shocks, high-pressure water exposure, and harsh temperature conditions. It is ideal for industries requiring ruggedized human-machine interfaces (HMI) and industrial automation systems that must withstand "hell conditions" without failure.

Figure 1: ARBOR ASLAN W922C enduring a water jet of 12.5 L/min at 30KP pressure.

Imagine a panel PC being splashed with a powerful water jet and still operating flawlessly. The ASLAN W922C panel PC is engineered to survive exactly such conditions, making it suitable for wet environments that require frequent washdown or are exposed to water sprays. Additionally, it withstands mechanical shocks of 10G at 11 milliseconds, ensuring reliable operation in environments with vibration and impact (see Figure 2).
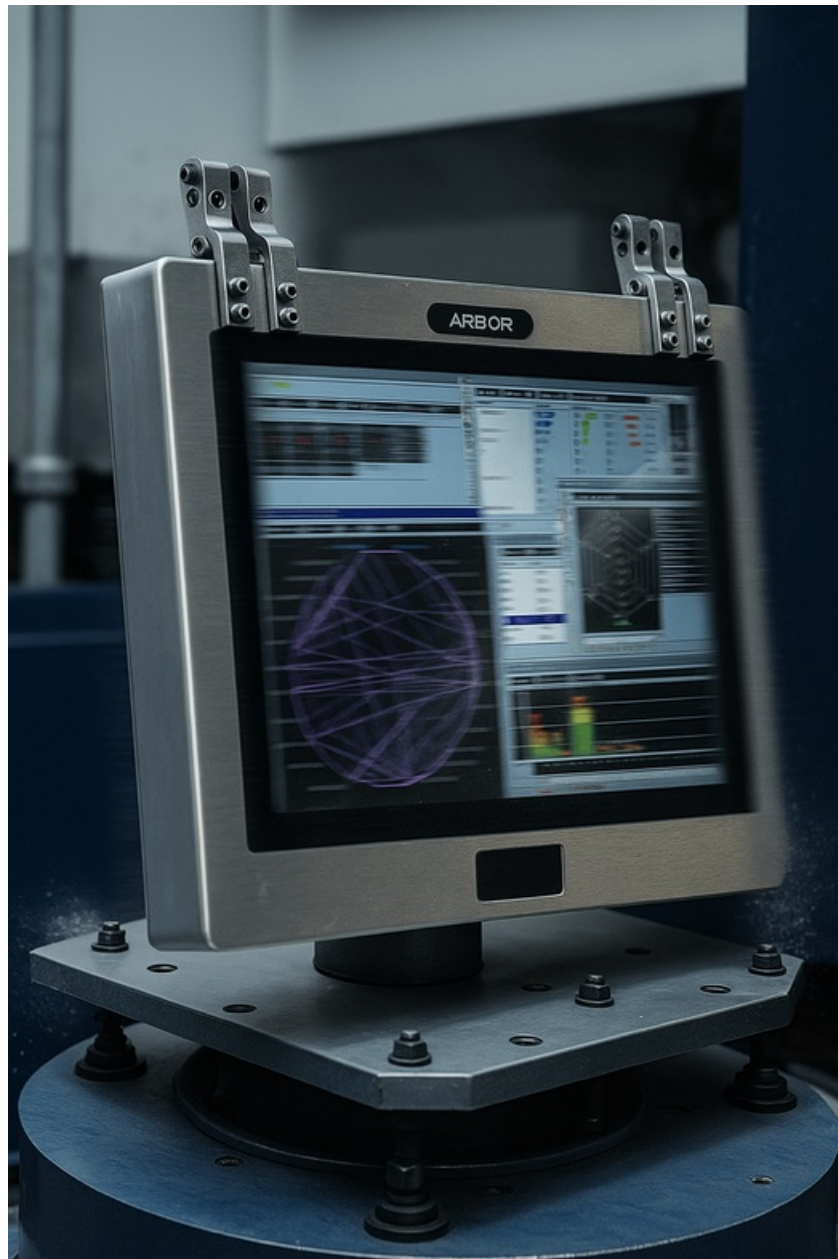
Figure 2: ARBOR ASLAN W922C surviving mechanical shock of 10G @ 11ms on a shaker.

Technical Highlights

The ASLAN W922C integrates a 21.5" LCD display with LED backlight and a capacitive touchscreen, providing a wide and clear interface for operators (see Figure 3). The front panel's capacitive touchscreen supports responsive and intuitive user interaction, suitable for industrial control and monitoring applications.

Figure 3: Front panel of ARBOR ASLAN W922C with 21.5" capacitive touchscreen.

On the rear panel, the system offers a comprehensive set of industrial interfaces including two 1 Gigabit Ethernet ports, two USB 2.0 ports, and two serial ports configurable as RS-232, RS-422, or RS-485, enabling seamless integration with legacy and modern industrial equipment (see Figure 4).
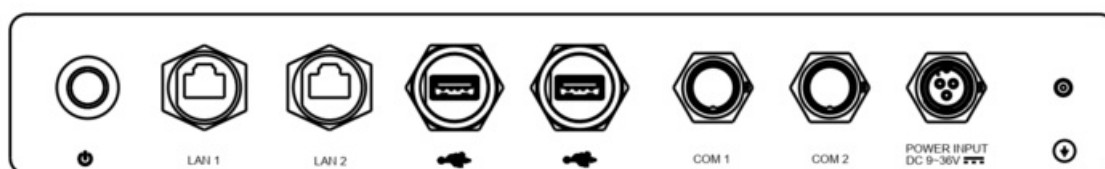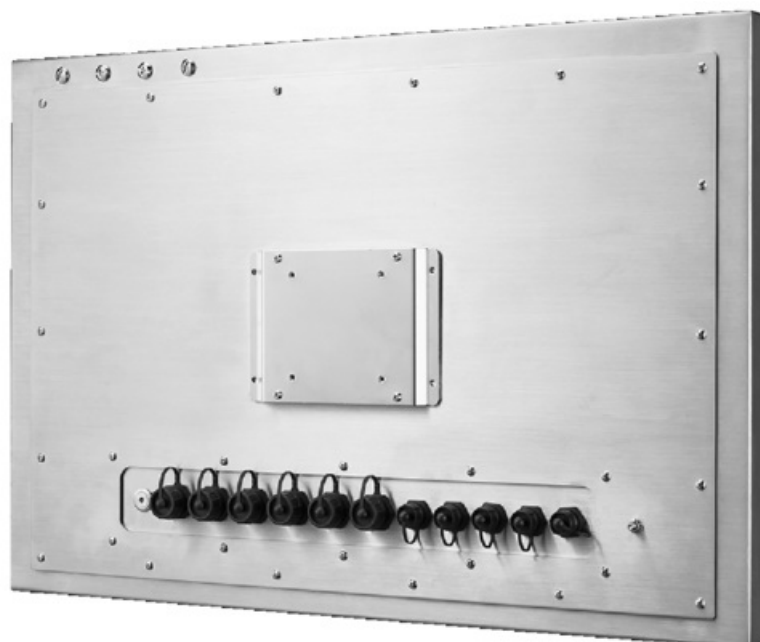

LAN 1   LAN 2   COM 1   COM 2   POWER INPUT DC 9~36V

Powered by an Intel® Core i5-6300U™ processor at 2.4 GHz and supporting up to 16GB DDR4 memory at 2133 MHz, the panel PC delivers robust computing performance for demanding industrial applications. It supports multiple storage options including mSATA and dual 2.5" drive bays, ensuring ample and flexible data storage capacity.

Integration & Applications

The ARBOR ASLAN W922C is housed in a full IP65-rated stainless steel chassis with waterproof connectors, providing protection against dust and water ingress. Its fanless cooling design enhances reliability by eliminating moving parts prone to failure in dusty or wet environments. The wide power input range of 10-36 VDC at a power consumption of 38W allows flexible deployment in various industrial power systems.

This rugged panel PC is suitable for a broad range of industrial automation and control applications, including manufacturing floors, food and beverage processing plants, pharmaceutical facilities, and outdoor installations where exposure to water jets, shocks, and temperature variations are common. Its robustness makes it an excellent choice for harsh environments requiring dependable, continuous operation.

The operating temperature range from -10°C to 50°C (14°F to 122°F) and storage temperature range from -20°C to 60°C (-4°F to 140°F) ensure stable performance in both cold and warm climates. The system is designed to withstand vibration from 5 to 500 Hz at 1Grms (with SSD) and mechanical shock up to 10G operating and 30G non-operating, providing resilience in mobile or heavy machinery contexts.

Variants & Support

Optional features include four SMA antenna connectors and Mini PCIe expansion slots, facilitating wireless connectivity and additional functionality integration. The stainless steel construction options cater to environments requiring enhanced corrosion resistance, such as food processing or marine applications.

Implementation Tips

- Ensure installation complies with IP65 ingress protection standards to maintain waterproof and dustproof integrity.
- Utilize the fanless design advantage by deploying the panel PC in dusty or wet industrial settings where traditional cooling fans would fail.
- Leverage the wide power input range to integrate the system with diverse industrial power sources without additional power conditioning.
- Configure serial ports appropriately to match legacy industrial communication protocols for seamless system integration.
- Consider environmental temperature ranges during site assessment to ensure the panel PC operates within specified limits.

Safety & Reliability Notes

The ARBOR ASLAN W922C's rugged design and stainless steel chassis provide superior protection against environmental hazards, reducing the risk of failure due to moisture ingress, corrosion, or mechanical stress. The fanless cooling system eliminates moving parts that could wear out or accumulate dust, enhancing long-term reliability. Proper grounding and installation in accordance with industrial safety standards are essential to maximize operational safety and device longevity.

We refined this approach at TrigoPi in real projects—reach out if you'd like to see how it applies to your case.

For more detailed technical specifications, integration advice, or to request an evaluation kit, contact TrigoPi to explore how the ARBOR ASLAN W922 IP stainless wide screen industrial panel PC can meet your toughest industrial computing challenges.

For more information, call us at info@trigopi.com or visit www.trigopi.com.