



ADLINK
TECHNOLOGY INC.



Optimizing Patient Care Experience in the OR Case Study

Introduction

Providing high quality patient care is the number one priority for today's hospitals. While a variety of tools are being utilized for quality improvement, digitization is especially useful in minimizing malpractice hazards, optimizing workflows and improving operational efficiency in the OR.

One particular scenario that relies on digitization is the patient data management system (PDMS) used by anesthesiologists within the OR, with the OR workflow dictating the need for constant access to critical information provided by the PDMS. ADLINK's hygienically designed medical panel computer with Intel's high performance processors provides this digitization capability, enabling anaesthesiologists to get to the data they need, exactly when they need it.

*ADLINK's medical panel computers are designed and manufactured by its PENTA ADLINK product division, which is dedicated to providing high performance medical products that meet the stringent requirements of medical industry.

Challenges

■ Powerful and easy-to-use computing solutions for patient data documentation

Documenting every stage during a clinical process creates a heavy workload for anaesthesiologists. A high compute power medical solution with intuitive touch screen interface is ideal for fast and reliable input of patient data, as well as data integration and management, within the hospital environment.

■ Cleaning and sterility issues for patient safety

Infection risks in the OR raise significant cleaning and sterilization issues. Standard PCs commonly use internal fans as a thermal control solution. This construction makes it necessary to have openings in the device housing, thereby allowing germs to get into the system easily through ventilation holes and into areas where it is difficult or even impossible to clean. Even worse, pathogenic germs can spread further when standard computer devices are used in sterilized surroundings.

In addition, standard PCs commonly use plastic materials for their external housing. But plastic quickly begins deteriorating from the frequent cleaning and disinfecting procedures that take place in the OR. This kind of standard PC housing can't be rapidly and easily sterilized using strong, efficient disinfectants, which is a major step in the post-operative hygiene process to prevent MRSA, C. diff and hepatitis from growing and spreading from patient to patient.

■ Medical certification and secure design

Panel computers used in the OR must comply with specific medical certifications in order to be installed in near-patient environments in order to enhance the safety of patients and medical personnel. In addition, the medical panel computers must be designed with the proper grade of protection against dangerous current leakage.

Solution

■ Simplifying the anesthesia documentation processing

With ADLINK's medical panel computers, anesthesia reporting can be prepared and carried out entirely electronically. All relevant patient data and processing stages such as medication, batch recording at blood banks, etc. are recorded in the PDMS. When doing so, the validity of the data is automatically checked to increase data integrity and patient security. Data from vital monitors and ventilation equipment is also automatically recorded by ADLINK's medical panel computers, which provide electronic data storage to guarantee comprehensive documentation processing.



■ Effective and efficient cleaning thanks to hygienic system design

ADLINK's medical panel computers feature a completely closed aluminum housing with a hygienic powder-coated surface finish and anti-glare safety glass, which is easy to clean thoroughly because of its ability to withstand strong, highly effective disinfectants. The durable, powder-coated housing and seamless integrated glass front panel reliably protects the touchscreen, as well as all other structural elements, against the harmful effects of aggressive chemicals during sterilization and also in day-to-day cleaning.

The design of ADLINK's medical panel computers enables effective and efficient sterilization in order to shorten changeover times between operations, which in turn enhances and improves usage of OR facilities. In contrast to standard PCs, ADLINK's medical panel computers are designed with a fully enclosed, smooth casing without joints, offering no apertures for collecting dirt and dust. The IP65 protection rating also prevents the ingress of liquids or dust into the housing and reliably protects the internal equipment against possible damage during the cleaning process. In addition, the internal (vs. external) wide range power supply eliminates the need to clean an extra part. ADLINK's medical panel computers also feature a fanless design and generate virtually no noise, which is ideal for near-patient applications in the OR.



■ Medical Compliance with electrical isolation design for enhanced patient safety

ADLINK's medical panel computers are designed as medical panel computers compliant with IEC/EN 60601-1 and IEC/EN 60601-1-2 standards and have galvanically isolated serial, USB and Ethernet interfaces. This prevents potentially hazardous current leakage from draining off towards the patient or causing equipment damage. Reliable protection for the patient and the medical personnel is provided against dangerous current leakage caused by faulty or incomplete potential equalization or voltage differences that may occur between the medical panel computers and peripheral equipment. In addition, ADLINK's medical panel computers are shielded so that emissions will not interfere with other sensitive medical equipment in the OR.

■ ADLINK's Solution Snapshot

The new MLC medical panel computer from ADLINK is equipped with the 5th generation Intel® Core™ i7 processor, delivering an outstanding balance of CPU/media performance and low power consumption, along with enhanced security and I/O flexibility. Available screen sizes are 21.5" and 23.8" with Full HD resolution and projected capacitive touchscreen (PCT) with multi-touch support. Additional options include RFID, barcode scanner, Bluetooth and wireless LAN. For more information, please visit www.adlinktech.com.

- Designed specifically for patient monitoring with up to Ultra HD (3840×2160) resolution with anti-glare coating for enhanced viewing capability
- Easy cleaning with IP65-rated, fully-sealed, gap-free aluminium housing to maintain the hygienic conditions necessary in medical environments
- Easy-to-use configurable function buttons and wide range of I/O and expansion capabilities
- Medical compliance, galvanically isolated COM, LAN and USB port for increased safety



■ About ADLINK Technology

ADLINK Technology is enabling the Internet of Things (IoT) with innovative embedded computing solutions for edge devices, intelligent gateways and cloud services. ADLINK's products are application-ready for industrial automation, communications, medical, defense, transportation, and infotainment industries. Our product range includes motherboards, blades, chassis, modules, and systems based on industry standard form factors, as well as an extensive line of test & measurement products and smart touch computers, displays and handhelds that support the global transition to always connected systems. Many products are Extreme Rugged™, supporting extended temperature ranges, shock and vibration.

ADLINK Technology is a Premier member of the Intel® Internet of Things Solutions Alliance. From modular components to market-ready systems, Intel and the 400+ global member companies of the Intel® Internet of Things Solutions Alliance provide scalable, interoperable solutions that accelerate deployment of intelligent devices and end-to-end analytics. Close collaboration with Intel and each other enables alliance members to innovate with the latest technologies, helping developers deliver first-in-market solutions. Learn more at: intel.com/iotsolutionsalliance.



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