Certified for Healthcare Applications.

Futureproof Your Healthcare IoT with Advanced Rugged Computers for Telehealth, Patient Care, and Emergency

Introduction

Innovation has long played a vital duty in improving healthcare facility procedures and boosting patient care. In hospital environments, accuracy, efficiency, and reliability are also imperative. From medical imaging to personal data, the medical facility atmosphere is a complex environment that requires sophisticated modern technology to maintain it running smoothly.

The global market for IoT in healthcare is constantly growing. This growth is driven by advances in technology and the accelerating adoption of modern healthcare technologies in health center operations and patient care. Healthcare IoT provides the technologies to improve the environment, performance, and reliability of healthcare operations, transforming and improving patient care delivery.

The current coronavirus COVID-19 shows that not all healthcare facilities are ready for such a massive pandemic. Medical-grade tablet computers confirm a reliable communication and information collection tool for those combating COVID-19 on the front line. The durable application-focused healthcare tablet computers supply a new generation of comfort for health care specialists, collect and transfer information, examine the medical diagnosis, and upgrade individual details in real-time.

For over 25 years, Winmate Inc., a rugged computing and embedded solutions provider for the healthcare industry offers certified devices for healthcare applications including healthcare displays, healthcare rugged tablet computers, customized ODM, and OEM service to create your unique healthcare solution. Our rugged devices offer paperless interaction advantages in the hospital setting and guarantee dependable top quality (EN-60601-1 and UL-60601-1). Winmate Inc. has received special honors such as the "Taiwan Excellence Award 2021" in the sturdy tablet computer collection.

There are several examples of where rugged tablet computers find their application in healthcare:

1. **Patient care -** Paper-based medical records are gradually fading. Its electronic counterparts - tablet computers come to replace them. With portable tablet computers, nurses can easily access patient information from any place. If needed, mobile computers can also retrofit medication schemes and doctor prescriptions. With wireless functions, nurses can contact doctors for advice, record, and share patient information in real-time. This improves efficiency and saves time for regular checkups.

2. **Emergency services -** Ambulance services are always on duty—devices in ambulance services for patient monitoring and reporting or route navigation. Usually, tablets switch between vehicle and fieldwork and require vehicle docking stations to allow devices to be powered from the vehicle, provide additional interfaces, and just as a convenient mounting solution inside the moving vehicle. Right devices onboard result in faster, more efficient, and superior care for emergency patients.

3. **Lab analysis -** Like patient care applications, laboratories try to reduce paperwork and utilize portable computers for experiments and research. However, possible exposure to dangerous chemicals and biological contaminants is a potential threat to electronic devices. They must be rugged enough to withstand regular cleaning and disinfection.

4. **Mobile Imaging -** The use of rugged tablets in doctors' offices, hospitals, and other medical facilities allows medical staff to access copies of medical images, such as ultrasounds and x-rays. This type of technology provides quicker access to images for comparisons, so two or more images can view side by side, allowing for appropriate treatment. Additional tools are available for medical tablets that enable medical professionals to connect the tablet to an ultrasound probe, allowing for quicker ultrasound imagining.

5. Medical Documentation - One of the most significant advantages of using tablets in the healthcare field is patient data accuracy. Using a tablet helps an entire healthcare system remain organized and consistent in different facilities. This is hugely beneficial to patients who receive treatment through various healthcare facilities because their medical information can be quickly accessed, allowing for quicker treatment.

6. Practice Management - Tablets provide medical organizations with easier access to in-house scheduling and planning. Staff can be scheduled, surgeries can be planned, and meetings can be arranged, all without stopping what you are doing to access the staff computer system. This management system makes it extremely convenient for medical professionals who need to schedule patient visits and procedures with other facilities. Medical billing is also streamlined, timely, and accurate with a tablet.

7. Patient Education - Educating patients on their injuries or illness and the type of medications and treatments they need are critical for their recovery. Tablets make educating patients easy because the medical staff can use resources, such as online videos, diagrams, and animations, to provide their patients with detailed information about their illness. Patient education helps them understand what is happening to them, and with instant access to education, the patient will have a better opportunity to ask questions and voice their concerns as information is being shared with them.

8. Medication Orders - The use of a tablet provides medical professionals with an instant view of their patients' current medications and allergies. This can be detrimental in providing medical treatments in an emergency, mostly when medicines you are going to give may interact with the patient's current medication. If a patient is severely injured in an automobile accident and unable to speak, medical professionals can quickly search the patient's medical history for medication allergies before providing treatment. Tablets also significantly reduce errors that are often found in handwritten orders.

Tablets and similar technology will continue to progress and change how the healthcare industry operates, providing better experiences for everyone at every treatment process phase.

Key Factors to Consider

Deployment of portable devices opens unlimited opportunities for its application in the medical environment and guarantees safety, a long life-time, and stable performance. However, not all of the devices are suitable for medical applications. Some key features are considered when choosing the most suitable medical tablet for hospital and clinic environments.
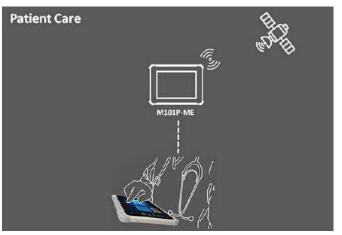
Medical facilities specialize in caring for patients, and it is their utmost responsibility to meet their needs. The entire workflow is utilized by this technology equipment and must be advanced to meet the medical industry's expectations. The best medical tablets for healthcare should include the following features: power & portability, easy usage, antimicrobial & liquid-resistant, and medical-grade certifications.

1. **Medical-Grade Certifications -** First of all, the device must have medical certifications IEC/EN 60601-1, 60601-1-2, which can reduce the risk of electrical shock and guarantee its safety for hospital applications. By bypassing the certificate, a manufacturer can assure that the devices perform safely and effectively without causing harm and electromagnetic disturbances in their appropriate operating environment. The Center for Disease Control and Prevention (CDC) recommended waterproof front bezels and hygienic aluminum housings in medical facilities for routine disinfection purposes. The tablet should allow disinfecting with liquid cleaners without damage. The CDC recommends healthcare facilities thoroughly clean sensitive medical equipment by using liquid disinfectants. Getting equipment, such as a medical tablet, that complies with CDC guidelines ensures a safer environment.

2. **Antibacterial housing -** Next, the rugged tablet's housing should be enhanced with antibacterial properties to minimize bacteria growth and be resistant to various cleaning chemicals with a waterproof design that allows cleaning the surface with wipes, sprays, and liquids without concern of affecting the internal components.

3. **Anti-glare solution and optical bonding -** Medical applications have particular requirements to screen visibility and images' quality. An anti-glare solution on tablet glass helps diffuse the glaring light, reducing its intensity and making it easier for the observer to see the correct image and provide perfect readability at extreme viewing angles. One more feature to look for when choosing a touch screen computer is optical bonding. The screen with optical bonding technology usually results in higher brightness, better clarity, and resistance to scratches.

4. **Ruggedness -** If installed on a medical cart or inside the ambulance, the tablet computer and docking station should be able to withstand intense vibration from the moving vehicle. No parts can be disconnected or loose. These are just a few distinguishing features of ruggedized devices over consumer-grade. Although the initial investment of choosing the rugged device may be higher, the design guarantees a longer life-time that results in a lower Total Cost of Ownership (TCO) in the long term.
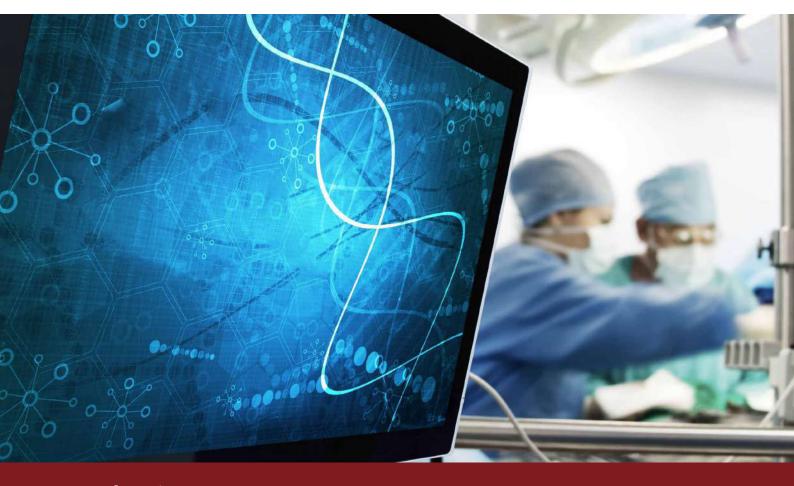

Application Diagram: Healthcare Tablet

5. Easy Usage - A medical tablet should be comfortable to hold and easy to use. Patient and physician's signatures should be easily captured electronically. It should include HIPAA compliant applications, giving physicians the freedom to write prescriptions from the tablet. Consent forms and other essential documents should be signed with ease. A medical tablet should also come with a stylus pen designed for signing prescriptions and other documents. Another essential feature in a medical tablet is barcode scanning – to scan patient wristbands and barcodes on medications.

6. Power & Portability - The best medical tablets for healthcare will provide plenty of storage – 64 to 128 GB is recommended. Medical tablets hold vital information, such as patient records and prescriptions, so the right amount of storage is essential. A lightweight medical tablet makes it much easier to bring it from room to room. Small, yet powerful, is what makes it stand out from the crowd when it comes to IT equipment. Medical tablets should offer superior processing power and 8 GB to run Windows 64-bit mode. Medical tablets need to be powerful enough to simultaneously run EMR and other medical applications. Medical tablets, designed for clinical usage demands, are redefining workflow in medical facilities due to their power and portability.

> **Telehealth or telemedicine is a new trend in healthcare. Rugged tablet computers for telehealth have a wide array of I/Os and often have expansion areas, where peripherals can be incorporated into the device, and also feature wireless connectivity and a webcam for virtual visits and checkups.**

Healthcare-Grade: Compliance & Certification

Healthcare IoT gives the technologies to improve the setting, efficiency, and reliability of medical care procedures, transforming and boosting person care distribution. Winmate provides healthcare-grade devices for health care applications, including healthcare display screens, healthcare sturdy tablet computers, tailored ODM, as well as OEM service to create your particular healthcare option.

✓ One-Stop service: HW + SW + PM + Factory all-in-one offering a total market-ready solution

✓ Infection Control: Fanless design, IP65 water and dust proof, rugged,

✓ Built-in data collection tools: RFID Reader, Bardcorde Scanner

✓ Safety certification: EN/UL60601, CE/FCC Class B

✓ Product longevity: 5 ~ 7 years

✓ Standard warranty: 2 years

✓ Extended warranty: 5+ years

✓ PACS Image Processing: DICOM Compliant

DID YOU KNOW? A healthcare tablet needs to be sealed correctly so that fluid can not enter it and trigger damage. It needs to be covered with a healthcare-grade antimicrobial compound to reduce the spread of pathogens. The style needs to enable an individual to completely clean up the whole tablet to prevent contamination due to compounds like dust, dirt, body, and blood fluids.

IEC / IECQ — QC 080000 IECQ HSPM

IECQ QC080000

Amendment 1 - Medical electrical equipment - Part 1-2: General requirements for basic safety and essential performance - Collateral Standard: Electromagnetic disturbances - Requirements and tests.

SGS — ISO 13485

ISO 13485

ISO 13485 is designed to be used by organizations involved in the design, production, installation, and servicing of medical devices and related services. It can also be used by internal and external parties, such as certification bodies, to help them with their auditing processes.

SGS — ISO 9001

ISO 9001

ISO 9001 specifies requirements for a quality management system when an organization:
a) Needs to demonstrate its ability to consistently provide products and services that meet customer and applicable statutory and regulatory requirements, and
b) Aims to enhance customer satisfaction through the effective application of the system, including processes for improving the system and the assurance of conformity to customer and applicable statutory and regulatory requirements.

SGS — ISO 14001

ISO 14001

ISO 14001 specifies the requirements for an environmental management system that an organization can use to enhance its environmental performance. ISO 14001 is intended for use by an organization seeking to manage its environmental responsibilities systematically that contributes to the environmental pillar of sustainability.

Winmate Products: Overview

From a health and safety viewpoint, the tablet's medical-grade, antimicrobial room also controls the infection UL60601-1 accredited to guarantee security and vital efficiency in health care settings. The challenging layout is one more unique function. The tablet computer has an IP65 enclosure score for water and dirt resistance and satisfies the MIL-STD-810G standard for shock and vibration sturdiness. The novel Coronavirus remains a presence of pandemic proportions. Limiting infection sources is always of primary importance in healthcare settings and has become much more critical. Disinfecting equipment and environments and pinpointing infection sources have assumed new levels of urgency. Part of the fight against disease is the rising use of antimicrobial materials. Winmate is quite aware of the issue, and its entire lineup of healthcare-grade mobile computers uses either antimicrobial surface coating or housing materials enhanced with antimicrobial properties.

DID YOU KNOW?

Nosocomial infections are contaminations that are transferred from one client to another in a medical facility or even healthcare setting, and they are a significant concern. Unlike health care computers, health care tablets are more likely to swap palms from one practitioner to the upcoming and may even be managed through individuals. Medical level tablets are antimicrobial to stop the array of dangerous microorganisms and are IP65 rated, so they may be routinely sanitized without damaging the system.

Notice that features may vary by product line and each model. Please refer to a product datasheet available on the website.

The whole housing of the M101P-ME with its plastic and elastomeric rubber parts uses an inorganic antimicrobial material that fights infection based on the way silver ions affect microbes.

■ **Fanless performance -** Winmate chose the quad-core Intel Pentium N4200 for the M101P-ME. Overall, the Pentium-powered M101P-ME can hold its own in terms of performance, and it is perfectly adequate for its intended tasks.

■ **Sharp, bright 10.1-inch multi-touch display -** Overall, between IPS display technology, direct bonding, surface treatments, almost perfect viewing angles, lack of color shifts, and the strong backlight, the Winmate M101P-ME display can be used pretty much anywhere, even in bright daylight. And the display surface of the M101P-ME isn't even overly prone to fingerprints and smudges.

■ **Dual cameras -** The Winmate M101P-ME has two integrated cameras. The user-facing 2 MP camera is for video conferencing, whereas the rear-facing 8MP camera with LED flash can be used for documentation purposes. The overall idea of adding cameras to workforce-grade tablets is so that their users can document whatever they are working on without the need for an additional camera. This way, everything is in one system. And having a lovely, sizeable 10-inch screen certainly is a lot more pleasant than the tiny screens on dedicated cameras.

■ **Ruggedness -** It became clear that ruggedness requirements in healthcare settings are often very similar to those generally encountered in the field. In both environments, tablets are tools for the job. They may get dropped. Designs must be practical and common-sense more so than just trendy and fashionable. Thanks to its construction and protective rubber over moldings, the Winmate M101P-ME is very solid and can handle a good deal of abuse. IP65 sealing means M101P-ME users won't have to shy away from liquids.

Summary

Data is transforming medical care in the age of COVID-19. Utilizing data-based treatments, medical professionals can identify signs previously, dressmaker therapies to the patient, track development with higher precision, and also boost individual care.

Medical professionals can only recognize these benefits if the data readily available is full, accurate, and continuously up-to-date. For this to occur, frontline staff need to have the appropriate smartphones and the right systems in position. These gadgets must user interface seamlessly to ensure that regardless of who is gathering the data, on what gadget or operating system, the information is promptly available to all licensed and pertinent systems and users.

The computer systems offer a new generation of ease for healthcare experts, accumulate and transfer information, examine the medical diagnosis, and update patient info in real-time. When selecting a computer system for medical care, it is necessary to consider safety, durability, and performance.

15.6" Multi-Touch Healthcare Display

1920 x 1080 resolution, PCAP touch screen

10.1" Healthcare Rugged Tablet PC

Intel® Pentium® N4200 1.10 GHz, up to 2.50 GHz

5" Healthcare Rugged Handheld Computer

ARM A53 (Octa-Core 1.3 GHz)

About Winmate

Founded in 1996, Winmate Inc. is a pioneer in rugged computing technology. For over two decades, Winmate has provided business leaders worldwide with reliable, rugged solutions made for the most challenging industrial conditions. From R&D to manufacturing to in-house testing, Winmate Inc. manages the entire product development process with ready-made products available for quick deployment. Today Winmate's innovative approach has helped countless enterprises at every level with equipment automation and seamless Industrial Internet of Things (IIoT) integration.

Visit www.winmate.com

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