IEI Smart Healthcare Solution

Design for Smarter Medical Environment

ICT Month Innovative Elite 2015 Top 100 Awards

DESIGN AWARD

BC AWARD

IRIS™ IPMI 2.0 Compliant

iEi ®

SGS ISO 9001   SGS ISO 13485   **FC** FCC Class B   **C E** CE 60601-1-2   c(UL)us CLASSIFIED UL 60601-1

For more information, please visit: www.ieiworld.com

Introduction

Population aging is becoming a worldwide phenomenon and the requirements of health-caring are increasing. The World Health Organization (WHO) reports that 90% of seniors (US population) have at least one chronic disease, and 77% have two or more chronic conditions. That means the medical resources for the aging people could be predictably rising. Moreover, for providing better caring quality and managing all the clinical information electronically, the stable and ruggedized industrial panel PC is widely used in the clinic environment these years. The booming IoT industry also makes the medical applications smarter.

In the Internet of Things (IoT), devices gather and share information directly with each other and to the cloud, making it possible to collect, record and analyze new data streams faster and more accurately. With the IoT technology, data could be transmitted via the sensors to the database of the hospital and analyzed there.This way not only reduces human errors that may cause medical malpractices, but also facilitates data access from relevant staff.

IEI is excited to see our embedded technologies being used in applications like the IEI Remote Intelligent System (iRIS) that provides remote monitoring and management capabilities for critical managed items. It allows staffs to manage, monitor, and maintain the distributed medical terminals remotely no matter where they are located in the hospital. We'll see more and more exciting new IoT-driven healthcare applications and systems emerging in the near future.

This white paper explores several challenges posed when deploying infotainment terminals for various scenarios in hospitals or medical centers, and identifies how these challenges can be overcome by the IEI new generation medical panel pc.
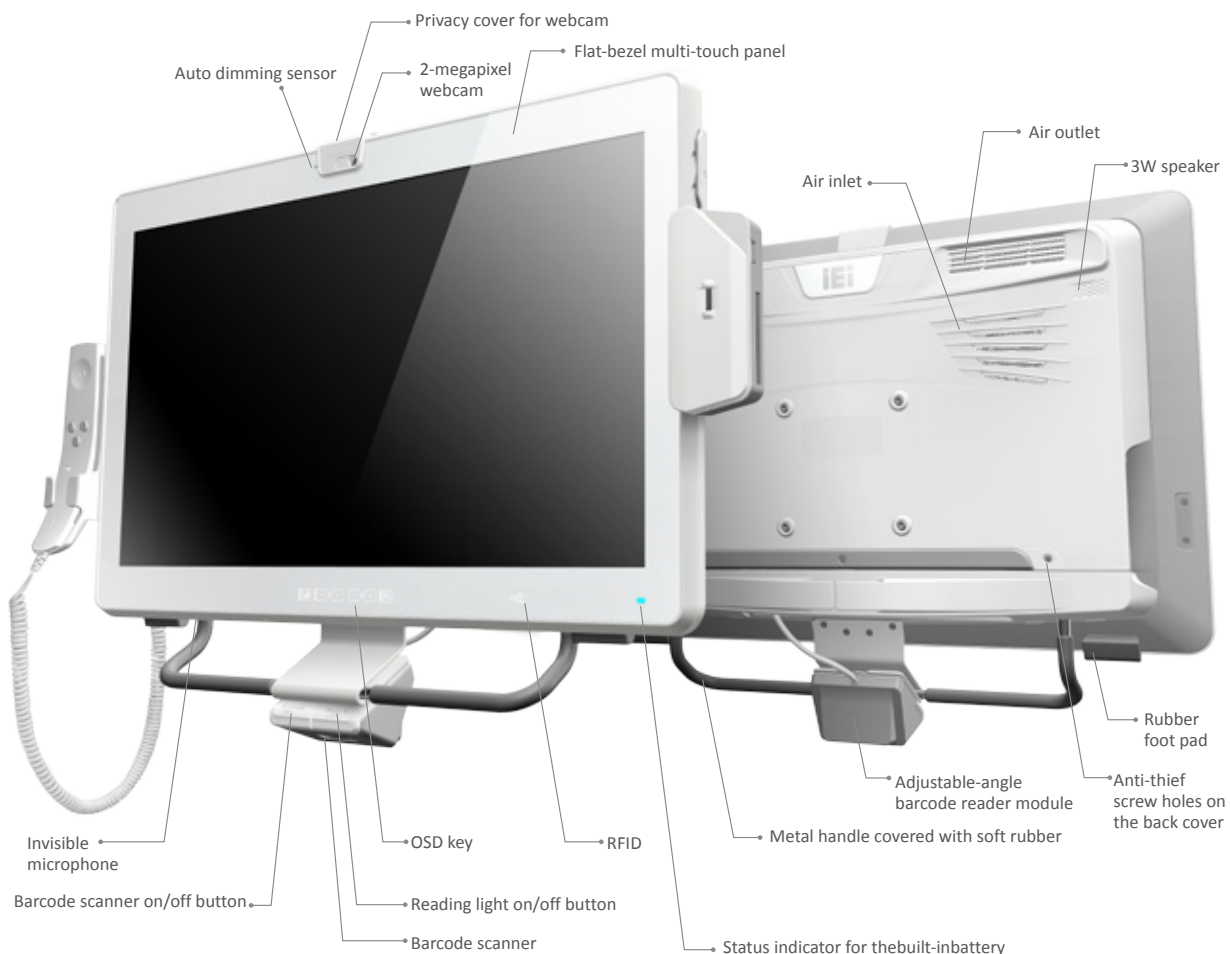
Slim Design with Multiple Expansion Capabilities and Remote Control Technology

The POC-W22A-H81 is a medical panel PC featuring IoT, and can be used as a bed-side terminal or a medical cart computer developed to completely meet users' needs and ergonomics. With the help of the IEI Remote Intelligent System (IRIS) technology, it is more convenient to manage, monitor and maintain the POC-W22A-H81 remotely. In addition, the light and slim design changes people's perception of the medical panel PC which is usually bulky and without any functional compromise.

An Optional Built-in IEI IRIS Module

The IRIS technology provides remote control and monitoring features, which helps to reduce maintenance cost and to increase working efficiency in hospitals.

An Optional Built-in Battery Module

The 54 W battery provides back-up power for up to 25 minutes in case of a power interruption. This feature offers protection against disruption of critical business operations or loss of data.

Multiple Internal Expansion Capability

With the magnetic mechanism and the screw-less chassis design, it is easy to disassemble and replace the memory, fan, HDD and PCIe Mini card, making the upgrade and maintenance process become efficient and simple.
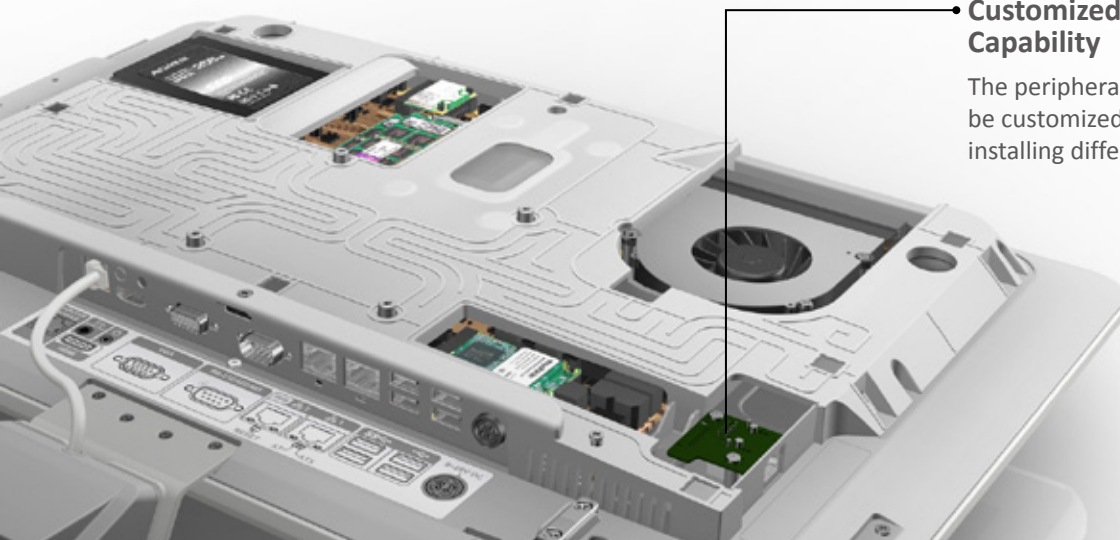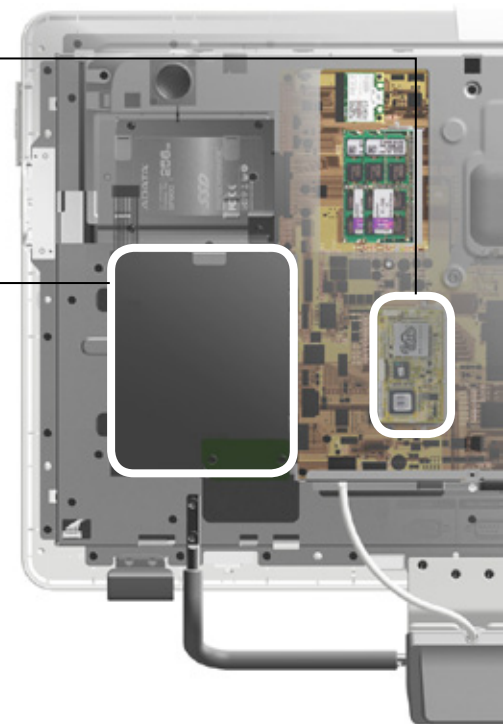
Customized Internal Expansion Capability

The peripheral interface on the side panel can be customized according to users' needs by installing different types of PCIe Mini cards.

Rich External Expansion Module Suitable for Every Customized Environment

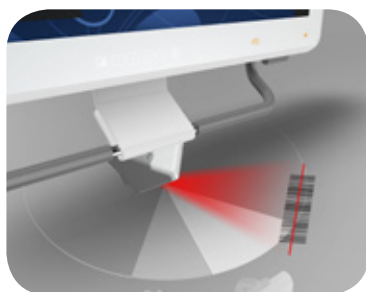Multiple external expansion modules make the POC-W22A-H81 meet every customer's needs.

3-in-1 Combo Card Reader

The 3-in-1 card reader that supports IC cards, magnetic cards and finger printeliminates unnecessary cables, and does not occupy any USB port on the I/O interface at the bottom of the POC-W22A-H81.
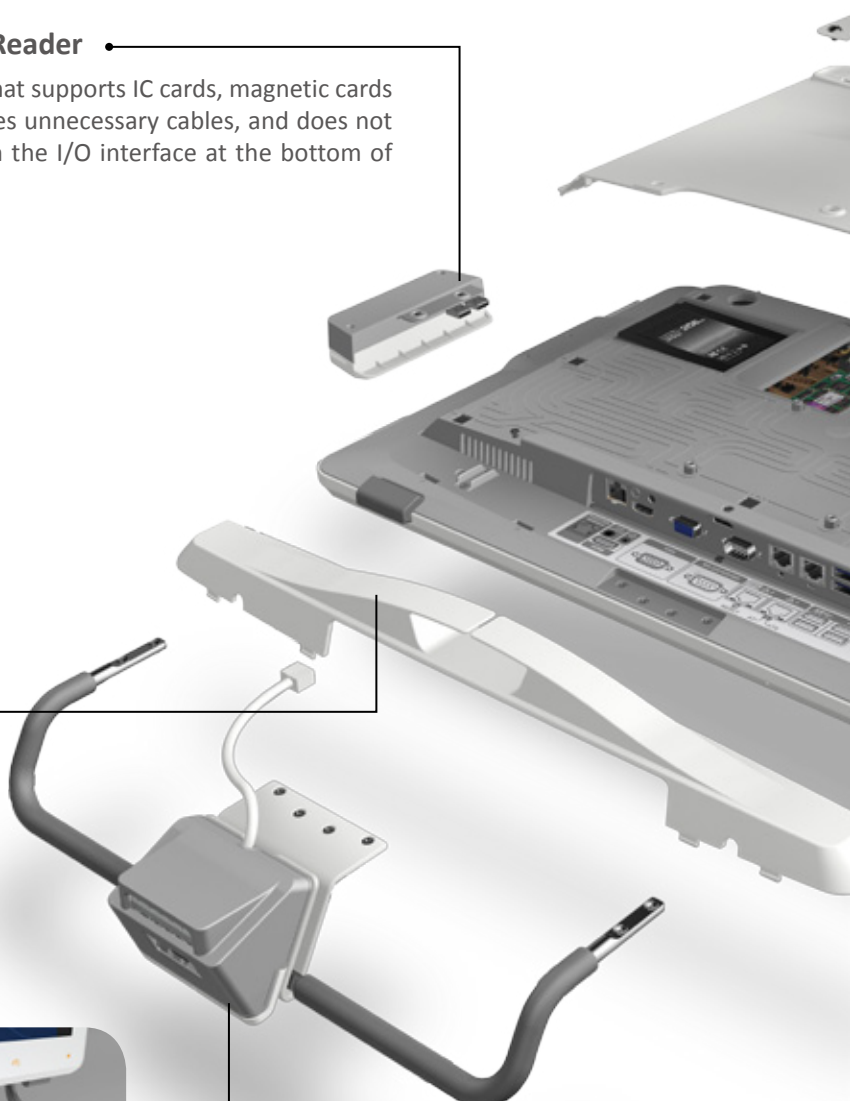
Hug Style Cable Cover

Users can easily manage all the cables from theI / Oports , to make it look fresh and allow easier cleaning.

Handle Module with Barcode Reader and Reading Light

Users can move panel PC easily. The barcode reader and the reading light module with adjustable operating angle can be used for multiple purposes.

Rich External Expansion Module Suitable for Every Customized Environment

EZ Stand

The EZ stand which combines the cable management hole and slim outlook is designed for desk-based environments.

Privacy Cover for Webcam

The webcam cover ensures the privacy of patients is protected.

Preserved Screws Holes for Customized Projects

Preserved screws holes for multiple modules, such as handset or sphygmomanometer, allow for customized installation capability.
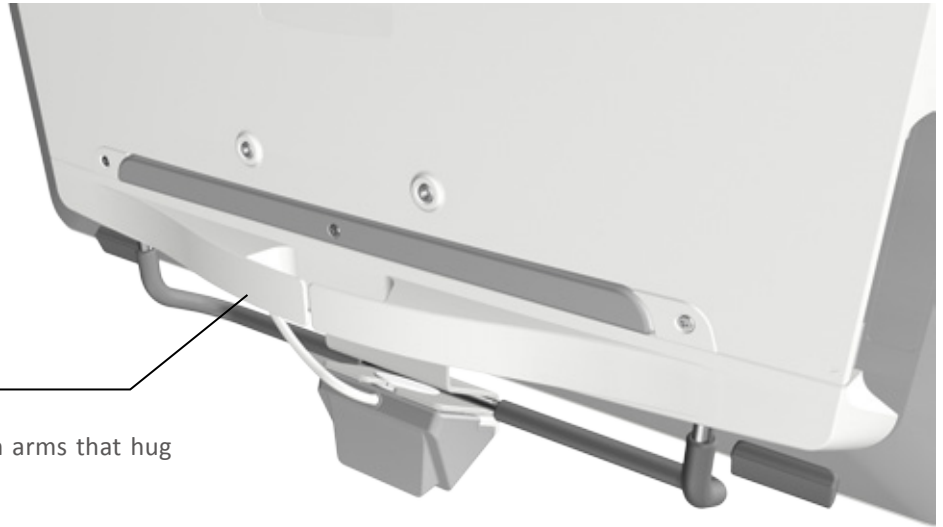
Hug Style Cable Cover

This cable cover is designed like open arms that hug patients with care passionately.

A System with Care–Simple and Light, yet Powerful!

Through the minus design thinking, the design concept of the medical panel PC becomes pure and simple, making the POC-W22A-H81 look slim. Through the plus design thinking, the design concept of the external expansion capability becomes more flexible and much fit the customized requirements.
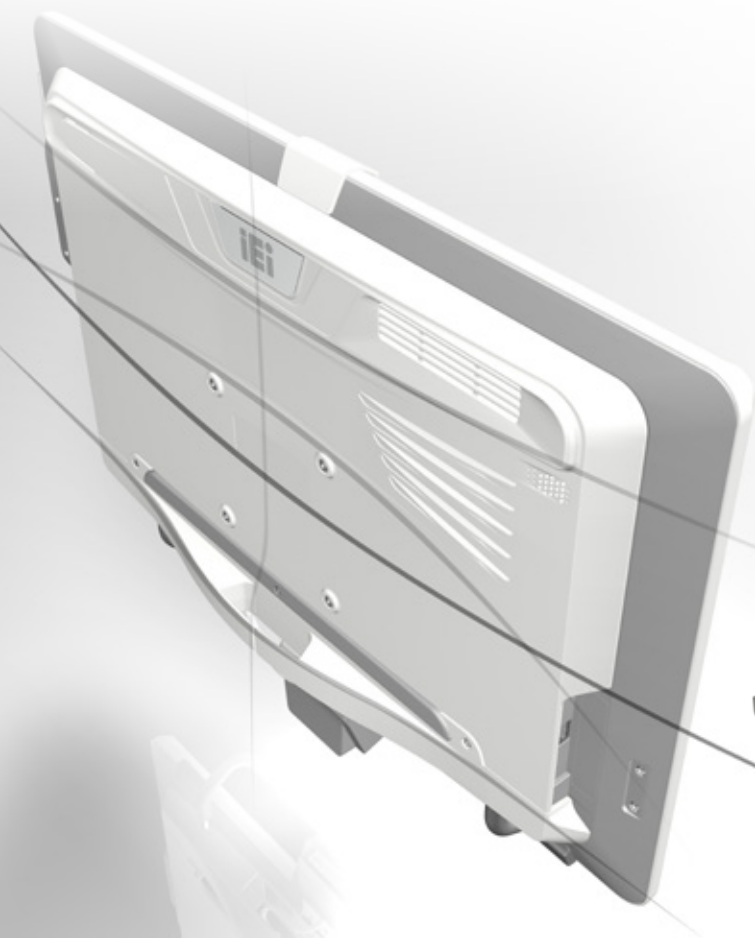
Smooth Curves at the Back

The smooth curves perfectly shape the air vents and make users feel warm.

Slim and Comfortable Sense of Touch

Slim and comfortable sense of touch makes users feel good while using it, and the clinician views will not be blocked when moving the medical cart.

Pay High Attention to Users'Experiences and Integrate All the Suggestions from Industry-academic Cooperation

Intensive cooperation with the Chang Gung University School of Nursing and the professional medical centers' personnel at the beginning stage of development makes the product 100% ideal for users' requirements. Implement the innovative design thinking activity to develop unique product features and to improve product functions.

Reduce the Occupation on the Desk of the Medical Cart

Integrating various modules into one entity saves more desk space of the medical cart and provides a convenient using environment.

Adjustable-angle Barcode Reader

The barcode reader on the handle module supports angle adjustment, with which users can scan the objects conveniently without moving the entire panel PC.

Easy Using

With the stable handle, users can easily adjust the using angle and the position of the POC-W22A-H81 . This feature greatly reduces the effort required using two hands to move the system.

Reading Light Support

The built-in reading light on the handle module provides lighting for a small area in a dark environment without bothering patients.

1. Bedside Infotainment

The highly-integrated POC-W22A-H81 can save time on cable-managing process. Its optional accessories also make the healthcare environment become more flexible and friendly.
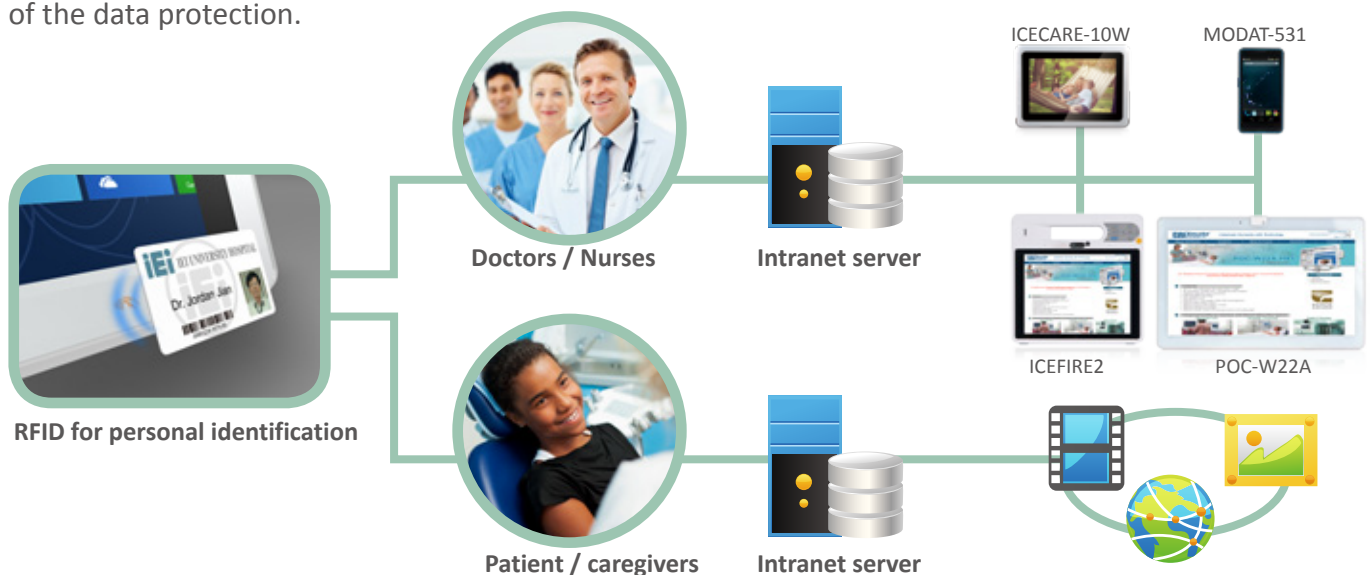
Through RFID, 3-in-1 card reader and Wi-Fi connection, doctors and nurses can log-in to the hospital information system to input medical checkup results, and to check the dosing records and other healthcare information. Nurses can also use barcode reader to collect relative information in the healthcare environment to eliminate human errors.

With the hospital system integrated, patients can check their medication records on the POC-W22A-H81 via RFID and the barcode reader. Through the Wi-Fi connection, patients can have their entertainment time as well. In addition, the multiple-fixed handle module offers great convenience to users so that they can adjust the using angle by just using a finger.

With various kinds of sensors (e.g. RFID and smart card reader), the IT personnel in hospitals can separate different loggers to different login path for data accessing. This application increases the safety of the data protection.

ICECARE-10W   MODAT-531

Doctors / Nurses   Intranet server

ICEFIRE2   POC-W22A

RFID for personal identification

Patient / caregivers   Intranet server

Remote Diagnosis & Troubleshooting

iRIS remote troubleshooting solved 85% of issues

- Remote BIOS update
- Remote OS recovery
- Remote KVM + Virtual Media
- Out-off-band backup

IPMI 2.0 Compliant

Patient room

Nursing station

Diagnosis room

Emergency room

The light, slim and smooth curves design with no inaccessible corners brings conveniences for the cleaning personnel and increases cleaning efficiency.

2. Nursing Cart Computer

Through RFID, 3-in-1 card reader and Wi-Fi connection, doctors and nurses can log-in to the hospital information system to input medical checkup results, and to check the dosing records and other healthcare information. Nurses can also use barcode reader to collect relative information in the healthcare environment to eliminate human errors.

The PCAP touch helps nurses operate the devices like using their mobile phone. Nurses who wear the latex gloves can operate the user interface easily during their daily routine.

Checking dosing information and recording the patient-care information usually happen hundreds of times in a nurse's daily work. If these repeated processes can be improved to make it friendlier, the working efficiency and convenience of the stressful nurses will be greatly increased. The handle module is integrated with a barcode reader and a reading light located near the working area instead of the side of the device, offering a great convenience for the repetitive work.

The 54 W battery module provides back-up power for up to 25-30 minutes in case of a power interruption. This feature offers protection against disruption of critical business operations or loss of data.

The light, slim and smooth curves design with no inaccessible corners brings conveniences for the cleaning personnel and increases cleaning efficiency.

3. Applications

Pharmacy counter

Dialysis lab

Examination center

Operating room