Hospitals today are being transformed into sophisticated medical facilities with computer-based medical equipment and intelligent, connected medical devices. Healthcare facilities are becoming digitized and networked, with a wide array of high-tech medical devices supplying data to a centralized electronic medical record (EMR).

Medical equipment such as Point-of-Care terminals, diagnostic equipment, laboratory/analytical equipment, drug dispensing carts, computerized physiotherapy, patient infotainment terminals, multi-parameter patient monitoring, endoscopy and Computers-on-Wheels (CoWs) all leverage PC-based architectures and feed data into the EMR, which acts as both a permanent repository for health information and a system that can be accessed instantly by doctors to assist with clinical decisions.

As healthcare providers deploy more technology into hospital settings, remote management of these devices becomes critically important in helping to contain costs, reduce complexity and increase the quality of healthcare.

Simplifying the Manageability of Medical Equipment with POC_Link
The manageability of intelligent distributed embedded systems used in “mission critical” applications is critical. These systems are typically connected to the hospital information system (HIS) network and are essential in ensuring that all information gathered is made available in real-time to the attending healthcare practitioners.

Advantech has developed specialized software, POC_Link, which is designed specifically to help customers maximize their return on investment using technology that provides greater flexibility and enhanced productivity. The interface uses Intel® Active Management Technology and provides an intuitive On-Screen Display to allow IT staff to easily control devices throughout a medical facility.

POC_Link delivers many benefits to hospitals and clinical environments, including:
- A web-based structure: modularized, OS-log-off data transfer, online service_updates.
- System health monitor: CPU temperature, voltage, battery capacity and remaining time, and network status.
- System information discovery: Hard disk drive (HDD) capacity, BIOS and system information.
Platform management: LCD brightness, power management, volume and hot key control.

Picture quality evaluation.

Simplified management from a centralized console providing detailed information and allowing the ability to connect and configure remotely.

These benefits combined with the capabilities of Intel® AMT 7.0 allow:

- Remote troubleshooting and repair of systems even when they don’t boot. Using Intel® AMT it is possible to remotely boot a device from a networked drive, called a golden disk, with known good software. Staff can also remotely change BIOS settings or reload a driver or OS, whether or not the system is running.
- A reliable mechanism to turn systems on/off, if needed, to save power.
- Quick deployment of security patches; remote unlock of encrypted drivers and management of data security settings.
- Complete control over a system with keyboard-video-mouse (KVM) remote control.
- Remote hardware and software asset tracking.

All in all, POC_Link helps an IT team simplify and streamline actions such as centralized deployment configurations, low-level virus detection and repair, improved uptime, automated power management, and hands-off software distribution and updates.

Apart from utilizing POC_Link, IT staff also has the option of developing their own manageability software. For these kinds of users, Advantech provides WMI and SUSI (Secure & Unified Smart Interface) manageability SDKs. Advantech’s WMI and SUSI SDKs help reduce development time and cost, facilitating the needs of customers who want a real-time centralized monitoring and managing system. The SDKs provide a set of user-friendly, intelligent and integrated interfaces, speeding development, enhancing security and offering add-on value for Advantech platforms.

POC-W211 Medical Point of Care Terminal

One newly released Advantech product where the power of POC_Link and Intel® AMT technology shines is the POC-W211 Point-of-Care terminal, a medical-grade device with a versatile array of options that fulfill a variety of medical usage cases. This system is being employed in a diverse range of applications ranging from data acquisition to vital signs monitoring devices, Patient Data Management Systems (PDMS) and visualization (X-ray, endoscopy), and it plays a critical role in the
The provision of medical care to patients. These devices are ideal in helping to bring EMR (Electronic Medical Records), PACS (Picture Archiving and Communication System) and CPOE (Computerized Physician Order Entry) to the point-of-care; they are UL60601-1/ EN60601-1 3rd edition compliant, and CE, CCC and FCC Class B-certified. The units are also IP65-certified for dust and water resistance, and easy to clean and maintain using disinfectant cleaners to help prevent bacterial contamination. The POC-W211 runs on the 2.2 GHz Intel® Core™ i7-2655LE processor and chipset, and it is capable of displaying crystal clear images on its 21.5” wide-screen display. Additional performance can be obtained by enabling Intel® Turbo Boost Technology, which adjusts processor speed for more performance when you need it.

The POC-W211, housed in a slim 6.5 cm casing, weighs 7 kg, accommodates a 5-wire resistive touchscreen for ease of use, and supports many optional features, such as Bluetooth, RFID, WLAN and more. Fanless operation makes it an ideal computerized solution for image-intensive medical applications in operating arenas, at bedside, nursing stations or other point-of-care locations within the medical facility.

POC-W211 and Intel® Active Management Technology (Intel® AMT)
As the sheer number and complexity of devices expands, the big challenge facing hospital IT staff is how to integrate, manage and secure these devices. Point-of-Care terminals are typically scattered in many different locations throughout a hospital. Advantech is now offering advanced management capabilities based on Intel® AMT, one of the ingredients of Intel® vPro technology available in the 2nd generation Intel® Core™ i5 and Intel® Core™ i7 processors, through its POC_Link software suite. The remote computer management software is based on client/server architecture (see Figure 1). It provides POC (Point-of-Care) devices with remote monitoring and management capabilities for critical managed items, including real-time battery capacity, system health, LCD, power and network status updates. POC_Link integrates Intel® AMT technology and POC management functions to provide a single management console. It allows staff to manage, monitor, and maintain distributed POC terminals remotely irrespective of where they are located within the hospital. With POC_Link, hospital staff can administer devices more efficiently and provide higher Point-of-Care quality.

Advantech Digital Healthcare
Advantech is one of the leading suppliers of medical-certified computing systems and services for the medical market. The company has worked with all the prominent medical device OEMs and system integrators and their medical-grade computing systems are essential in helping hospitals provide real-time care in operating rooms, ICUs, exam rooms and wards. Advantech healthcare solutions allow healthcare practitioners to connect to hospital information systems (HIS) at the bedside to assist in patient consultations and treatment. They provide numerous medical systems technologies, such as:

- Point-of-Care Terminals
- Patient Infotainment Terminals
- Mini PCs and Box PCs
- Mobile Clinical Assistants
- Medical Tablets
- Single Board Computers
- Computer on Modules
- Diagnostic displays

Advantech’s portfolio includes a diverse range of touchscreen-equipped POC terminals built specifically for the medical environment with a choice of configurations and screen sizes ranging from 10 to 22 inches diagonally.

For seamless integration, Advantech provides an application-ready platform software suite, which helps medical IT departments, application developers, and system integrators achieve rapid application development, easy system deployment and smart system management.

For more information about Advantech healthcare solutions, visit www.advantech.com/healthcare. For more information about Intel® healthcare solutions, visit www.Intel.com/go/medical.