OEM Solutions: Bar Codes in Healthcare - Collecting Vital Data

In today's new OEM designs for the healthcare industry, equipment manufacturers can easily add sophisticated technologies to enhance applications. One example is the small but capable bar codescanner. This automatic data collection device adds value to healthcare applications by facilitating data capture and transfer to reduce errors and provide greater security and safety for thepatient. Bar code scanning is not new technology in healthcare.

Applications that Benefit from Automatic Data Collection

Imprinting bar codes on patient wristbands has become standard practice for many hospitals. It gives healthcare organizations a positive authentication method (end -to-end match) sans the errorsresulting from manual typing and writing. Scanning the code on the patient's wristband, the medication and even the identification of the attending caregiver creates an electronic account of when,where and by whom the patient was attended in addition to what was done. Even patient test samples can be positively tagged and tied electronically - in real time - without errors. Scan the patientwristband and the test sample's bar code, and the system has recorded the needed data - accurately.

Now healthcare providers can be more confident in knowing that reports, records, samples and even doses are correct. The use of bar code scanning technology helps ensure that the actions they takeare based on correct information. This reduces the risk of patient injury and subsequent litigation while creating accurate documentation for billing and insurance purposes.

Integration is Simplified with Today's Sophisticated Devices

What once took specialized engineering disciplines such as opto -mechanics and electronics are now a component integration exercise, which leverages electrical and mechanical engineers. In addition,manufacturers provide detailed integration guides that recommend the best interfaces and even supply two -dimensional (2D) databases that allow design engineers to integrate the device "virtually"within a CAD environment before a single model is fabricated.

What are the First Steps to Adding an Automatic Data Capture Device?

First and most important, understand your customers' applications. What kind of symbologies are they collecting? In what position will it be read? Answering these questions will help you select thebest device to use. Data collected from a one -dimensional (1D) bar code is very different from the information captured from a 2D code (e.g., DataMatrix or PDF417). Bar code readers provideomnidirectional reading and simplify the training needed for the operator and the process of collection.

Choice of scanning technologies is no longer a critical decision point. Once the type or types of bar codes are established, customers (and their solutions providers) can consider a variety of bothlaser scanning and imaging products that add relevant value to their applications.

Single-line reading scanners are low cost and in most cases more compact in size. These devices capture 1D bar codes and some 2D codes such as PDF417. They also usually have lower powerrequirements as well. In this product category, one of the most robust technologies is the laser scanner. Laser scanning sets the standard for bar code reading and offers the much versatility interms of size and performance. With robust working ranges, laser scanning is unencumbered by distance.

Another robust system is array imagers, which offer customers small -sized devices with several side benefits like picture capture and omnidirectional readings. These devices are optimal if 2D codeslike Datamatrix are used. Added features equate to a greater number of applications that a device can support. Inventory control, receiving and even shipping can benefit from image capture. Itsinherent omnidirectional reading capability greatly eases the use and acceptance rate of newly deployed devices.

The Biggest Developments are also the Smallest

The best news about these devices is that they are only getting better and better. Manufacturers have managed to reduce their size so that they are easy to integrate into any size medical device.From the very sophisticated capabilities of a scanner with a volume of one cubic inch (16.4 cubic centimeters) to the even smaller "pico" sized devices that are only 20 percent of this size. Toassist with decoding the data, image capture devices offer separate processor boards or rather, chips that can locate the bar code within the image and transmit the data to the host system - oftenin less than 1 second. This chip is available in a ball grid array (BGA) package to simplify mounting to system printed circuit boards (PCBs).

Where are These Devices Finding Homes?

From the simplest pen device to the application -rich mobile PDA, automatic data capture has found a place and adds functionality to smaller, more ergonomic devices. Applications allow the bar codedata to be captured at the point of care, moved to point of use on host systems and carefully managed to completely automate data keeping processes. Additionally, these automatic data captureengines have been integrated within equipment found in labs and at the patients' bedside. Glucose monitors and blood analyzers are two examples of integrated data capture.

Where can I get started?

With the largest offering of data capture products in the industry, Symbol is the OEM supplier of choice with products, integration databases and support to reduce your products' time to market.With millions of devices installed worldwide, Symbol is prepared to assist OEM design efforts with its worldwide distribution and service capabilities. See our latest Symbol OEM products at .

Written by Patrick Mauro, Business Unit Lead, Scan Engines, Symbol Technologies, Inc.