

B U S I N E S S S O L U T I O N S



H E A L T H C A R E

Facing Tough Challenges

In the healthcare industry today, it is absolutely critical to provide the most advanced patient safety, excellent patient care and most efficient communication between medical professionals to protect patients. Fortunately, this has been made possible through affordable and life-saving Health Information Technologies (HIT) for any medical facility in the world.

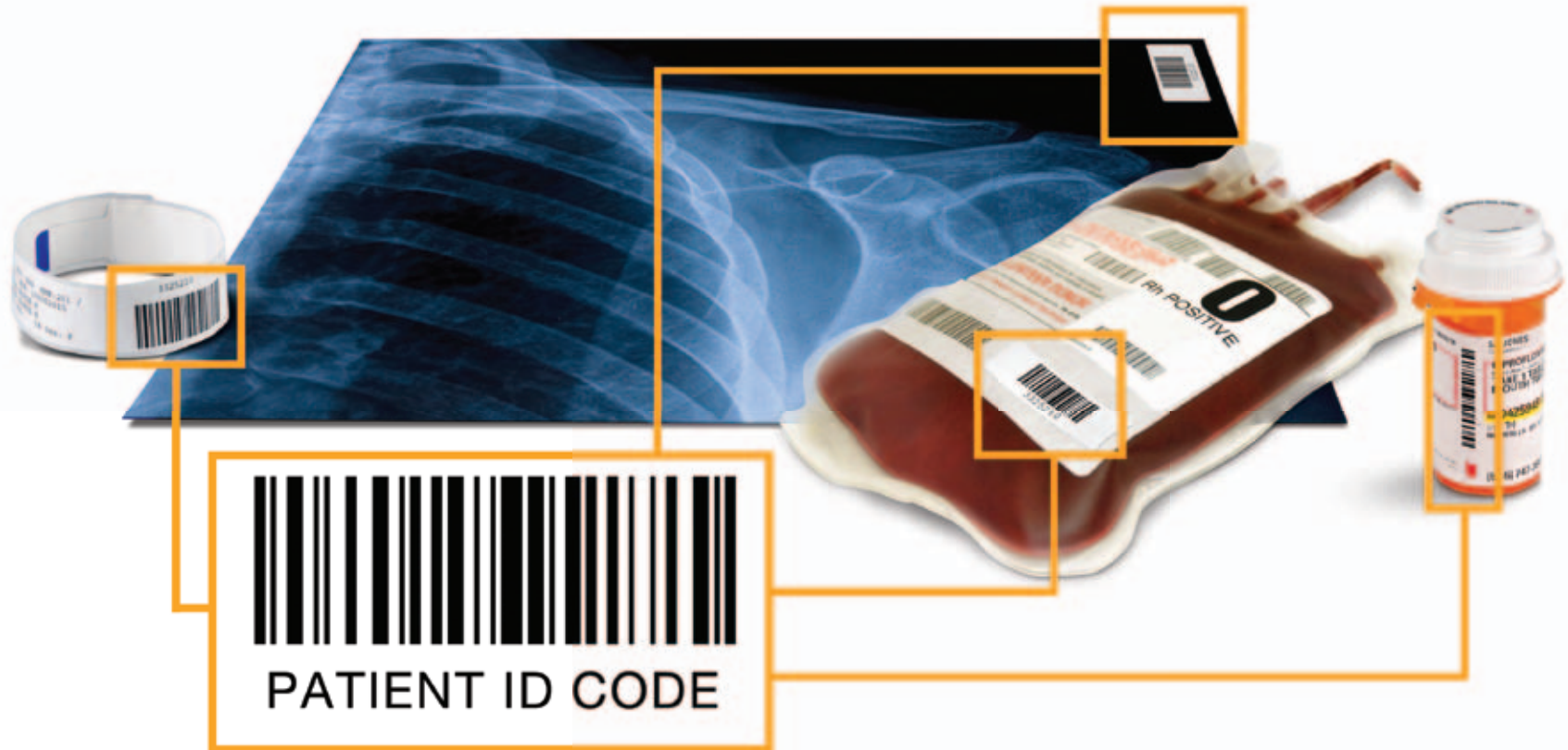
The shift towards HIT is clear. According to the Healthcare Information and Management Systems Society, nearly 65% of U.S. hospitals are expected

to purchase a Clinical Decision Support application for the first time in 2010. Additionally, the American Recovery and Reinvestment Act expects more than \$19 billion to be invested into HIT to improve the quality, safety and efficiency of U.S. healthcare systems.

So which HIT system is being identified as the strongest investment? Today, bar code scanning has become a leading technology for point-of-care, administrative and laboratory / pharmacy

applications in the healthcare industry. With the ability to capture data without human interference, bar code scanners have proven to be the most cost-effective identification technology today.

From patient admittance to post care services, bar code scanning has revolutionized the way hospitals collect information. Automating manual processes through this technology provides patients with the best care and improves the productivity of any medical team.



Things to Consider

Cost of a Mistake: As humans, we accept our tendency to make mistakes; however, the healthcare industry has not. Even the smallest amount of negligence has the potential to cause not only a major lawsuit, but the loss of life. With medical errors responsible for more than 200,000 deaths in the U.S. alone each year, the healthcare industry can no longer afford to make mistakes.¹

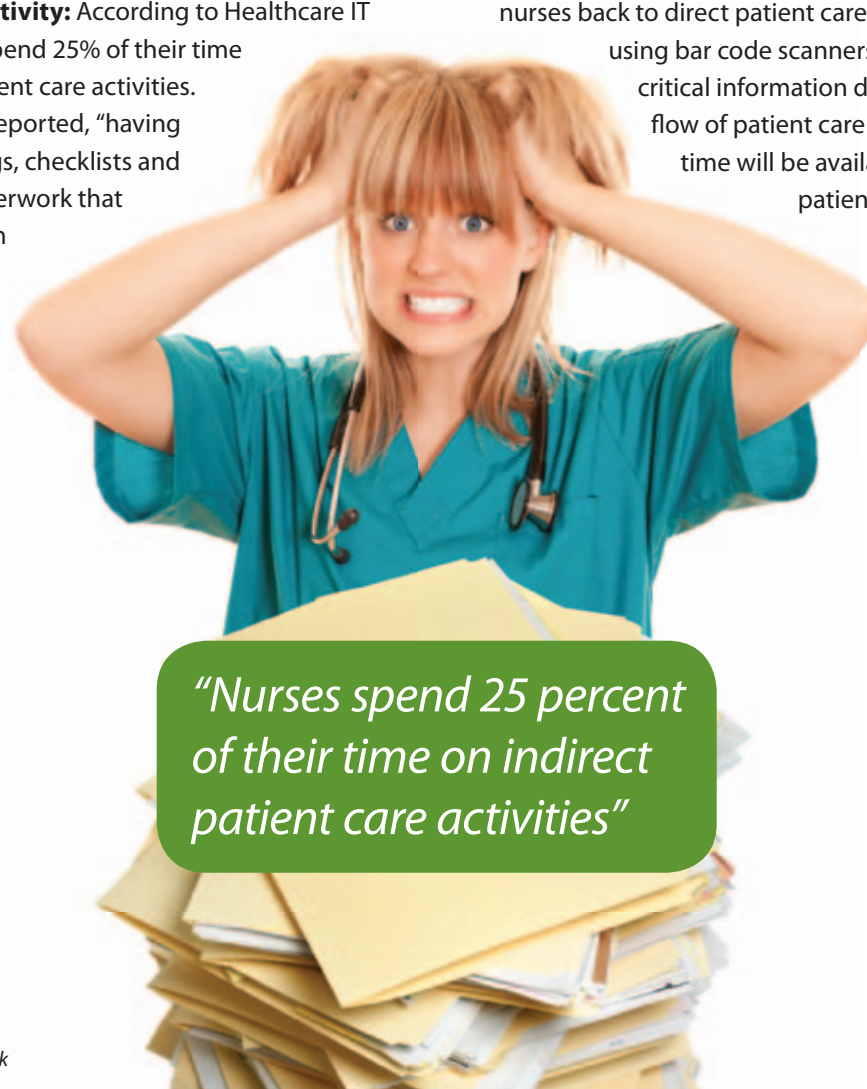
Bar code scanners provide the accuracy and assurance of collecting the right information the first time, which significantly improves patient safety. In fact, bar code scanning can reduce

potential errors during medication administration alone by over 50%. Now, multiply this risk reduction across nearly every healthcare application and imagine the difference.

Loss of Productivity: According to Healthcare IT News, nurses spend 25% of their time on indirect patient care activities. In fact, nurses reported, “having to complete logs, checklists and redundant paperwork that prevented them from having more time with their patients.”

Nurses also reported, “time wasted in securing equipment and supplies for procedures.”²

Although the nature of this industry breeds redundancy, there is a clear opportunity to bring nurses back to direct patient care activities. By using bar code scanners to capture critical information during the natural flow of patient care activities, more time will be available for direct patient care due to a more productive medical team.



“Nurses spend 25 percent of their time on indirect patient care activities”

Top Point-of-Care Challenges:

- Updating Patient Medical Records
- Medical Staff Productivity
- Precise Pharmaceutical Dispensing
- Laboratory Specimen Tracking
- Inventory Management
- Positively Matching Patients with Medications
- Supplies and Equipment Tracking
- Accurate Patient Billing

1. *The Scientific American's Deaths from Avoidable Medical Error (2009-08-10)*
 2. <http://www.healthcareitnews.com/news/survey-shows-nurses-spend-most-their-time-paperwork>

Patient Care

Bedside Medication Administration: Most hospitals are bound to a specific “Code of Care” to prevent errors when administering medications. For instance, the “The Five Patient Rights” was adopted in the U.S. to guarantee that the “right patient” receives the “right drug, right time, right dose and right route.” Bar Code Medication Administration (BCMA) systems are a critical component of these codes.

Datalogic Scanning has developed a BCMA system called ‘Perfect Match’ to easily protect patients against preventable errors. This system works by first scanning a patient’s hospital wristband and patient medical record. If the two bar codes are a ‘Perfect Match,’ the reader will beep and show a ‘Green Spot’ directly on the bar code. The bar codes associated with the medication in the medical record and the medication labels are then scanned. If the nurse receives another Perfect Match, the patient has been positively matched with his or her medication. It is that simple.

The Perfect Match is made possible through software on the host system that confirms the match and provides feedback through the bar code reader to the operator. This is actually a feature of the Datalogic STAR Cordless System™ radio with bi-directional communication, which allows data to transmit from the reader to the host system and vice versa.

Updating Patient Electronic Medical Records (EMR): Without a bar code data capture system in place, medical professionals often update patient records in ‘batches’ to save time. Without timely data entry, however, patients are at risk to decision making based on outdated records, not to mention the likelihood for error due to manual data entry.

Fortunately, bar code readers ensure nurses can update patient EMRs with critical data while simultaneously performing patient care activities. By automating this manual process, the opportunity for human error is eliminated and productivity is significantly enhanced. Furthermore, reporting patient information in real-time reduces the chance of errors occurring because of outdated information.



Shhhh...

Datalogic Scanning's patented **Green Spot** is the perfect solution for scanning in both noisy and quiet hospital environments. The Green Spot provides additional feedback for the operator when the scan 'beep' cannot be heard due to noise. It also allows the reader to be silenced when working in a quiet environment with sleeping patients. This technology is critical for safety and improves the quality of care for patients.



Laboratory

Specimen Tracking: Bar code scanners can be used to track specimen samples through the laboratory to ensure that the proper specimen is collected, the correct tests are performed and the right results are delivered to the right patients as quickly as possible. Tracking specimens in a lab is an activity similar to work-in-progress (WIP) in manufacturing, where the samples are scanned systematically with a bar code reader in each step of the analysis process, from collection to the results.

Speed of Diagnosis: Without the use of bar code readers, it can take an average of three laboratory workers up to 24 hours after receiving a sample to register the requests on the system.³ Bar code technology, however, offers significant enhancements to lab productivity and accuracy. In fact, laboratory tasks can be performed in 50% less time and with better data quality when using bar code readers.³ As a result, the lab can report faster results, which allows a doctor to make a more timely diagnosis.

Accuracy of Test: Lab workers generally manage hundreds of specimen samples and tests all at one time. Accurate management

is critical because samples cannot be identified without a proper label. If the samples are labeled incorrectly and mixed, patient safety issues will inevitably follow. In addition, poorly performed or managed tests commonly result in negative experiences for patients and can increase the overall cost of care if repeated testing is required.

By using Datalogic Scanning's bar code readers, hospitals can improve the accuracy of sampling, labeling and analyzing specimens, which reduces the chance of collecting the wrong sample and improves overall patient safety and care.



3. www.e-healthinsider.com

Pharmacy

Electronic Ordering: Once a patient's medical record has been updated, bar code readers can automatically notify the pharmacy of a new prescription order. When the medication label is scanned, the data is immediately uploaded into the IT system, which makes the information accessible in the pharmacy. This improves overall efficiency and error-proofs the ordering process as well as gives the pharmacy staff easy access to real-time patient information.

Order Filling: When filling an order, it is critical for the pharmacist to not only reference the correct order, but to validate that the order itself is correct. This process guarantees the patient will be given the right medication and dosage; however, it can be very time consuming when completed manually.

Fortunately, the traditional bar code application, of "picking" and "packing," can be used to improve this process. Similar to picking an item in a warehouse and matching it to a pick list, a pharmacist can scan the bar code label on the prescription and the patient's medical record to confirm a Perfect Match.

Inventory Management: Bar code readers can update pharmacy systems as medications are scanned on the order "pick list" during prescription filling. With real-time inventory updates, pharmacies can create major productivity gains, reduce costs, forecast future prescription orders and track recalled or expired medications.



Administrative

Admittance: When patients are first admitted to the hospital, bar code readers can help create the patient's unique medical record and wristband, which both use identical bar codes. Scanning a patient's driver license or ID card, for instance, allows the administrator to collect accurate data at the first point of contact, which is critical for the remaining activities during the patient's visit.

Patient Billing: To avoid disputes with patients and insurance companies, hospitals can use bar code readers to create accurate and timely billing statements. This can be done by recording each activity performed and linking it directly to the patient's bill, which develops the statement as procedures are completed. Automating the billing process not only saves administrators time, but helps generate accurate and comprehensive billing statements for patients.

Tracking Equipment: Bar code systems that are used to track equipment can provide major productivity gains for medical staff. For frequently used equipment such as wheel chairs or medication carts, it is important to know if the equipment has been returned and if not, who was the last worker to check it out. Bar code readers from Datalogic Scanning can easily provide this type of tracking and reporting.

By using a bar code tracking system, hospitals can manage a perpetual inventory to improve supply chain efficiencies. Bar coding can also determine how often items are used, which can justify new purchases or indicate items that can be eliminated to provide the most cost effective budgeting.



Choosing the Right Solution

Cleaning: Datalogic Scanning offers bar code readers designed specifically for the healthcare industry with a 'Disinfectant-Ready' enclosure that can help fight against the spreading of germs. This is particularly important if the scanner is traveling room-to-room on a medication cart with a nurse. The Disinfectant-Ready enclosure is made with a special plastic / rubber material that can withstand daily cleaning with harsh chemical cleaning solutions commonly used in a healthcare environment.

The following are examples of chemicals that can be used on Datalogic's Healthcare bar code scanners:

PRODUCT	CHEMICAL CONTENT
Sani-Cloth® HB, Sani-Cloth® Plus, Super Sani-Cloth®	Quaternary Ammonium Chloride solution
Hepacide Quat II	Virucidal disinfectant cleaner
Alcohol Wipes	70% Isopropyl Alcohol
CaviWipes™	Isopropanol 10-20%; Ethylene Glycol Monobutyl Ether 1-5%
Virex® 256	n-Alkyl Dimethyl Benzyl Ammonium Chloride; Didecyl Dimethyl Ammonium Chloride
409® Glass and Surface Cleaner	n-Alkyl Dimethyl Benzyl Ammonium Chloride; n-Propoxypropanol
Windex® Blue	Isopropyl Alcohol
Clorox® Bleach	Sodium Hypochlorite; Sodium Hydroxide
100% Gentle dish soap and water	

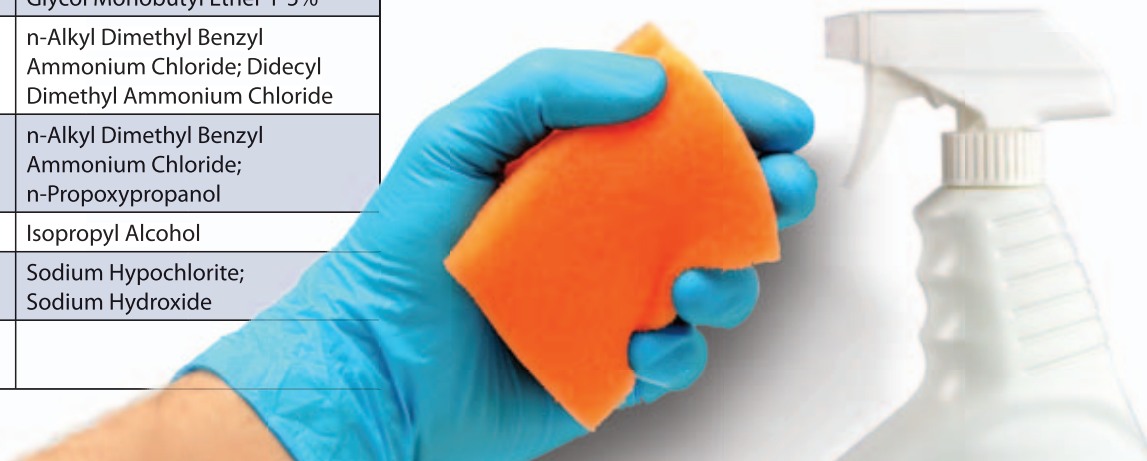
Durability: Durability is important to consider when selecting a bar code reader for certain healthcare applications. For example, durability is an invaluable feature for scanners on medication carts. These mobile carts move with the nurses during patient care activities, increasing the likelihood that the scanner could be dropped. Other applications, however, do not absolutely require durability; thus, choosing a less durable reader can help lower the cost of investment.

For applications requiring durability, select a bar code reader with a higher drop-to-concrete specification of 1.5 m / 5 ft or greater. It is also important to consider the IP Seal rating, which indicates the level of protection against dust and water (the higher the rating, the more protection). An IP Seal rating of at least 52 is ideal. Datalogic Scanning offers solutions from slightly rugged models to extremely rugged models to fit any environmental need.

Ergonomics: As with most medical equipment, choosing a bar code reader with ergonomic features is also important. A comfortable design can help prevent repetitive strain injuries. For patient care and administrative tasks, Datalogic Scanning recommends a reader that weighs less than 284 grams / 10 ounces for all-day use. For use inside a pharmacy or laboratory, a reader that accepts diverse scanning styles (i.e. sweeping or presentation) will provide the operator with better ergonomics.

Power Supply and Consumption: Low battery consumption and recharge time for cordless scanners are critical for successful implementation into the healthcare industry. If the operator has to switch or recharge batteries during a shift, it takes away from patient care duties. It also may require extra batteries, which add to the cost of the investment. For a productive and cost effective investment, select a reader with sufficient battery life. It is worth the additional cost. Ideally, it is recommended that the reader should meet or exceed the following specifications:

- Battery Draw (Idle/Not charging): Less than 200 m
- Battery Draw (While charging): Less than 850 mA
- Recharging Time: Less than 3 hours
- Battery Life: Greater than 8 hours (1 scan / second).



Mobility Requirements: Another critical decision is determining the form factor required. Due to the extensive amount of mobility in patient care activities, cordless bar code readers are essential in healthcare. Cordless bar code readers can travel with nurses on medication carts while being connected to the base station, enabling free movement and eliminating the risk of medical staff or patients tripping on dangerous cables.

Corded scanners are also useful for general administrative activities that do not require mobility. For example, tasks such as creating billing invoices or updating patient medical records can be easily accomplished with a corded scanner. With the same reliability and performance of a cordless solution, corded scanners are much more cost effective; thus, choosing this form factor for the appropriate applications can help save on costs.

Reading Symbolologies: Collecting, recording and managing even the smallest amount of information can help save a life. Today, the healthcare industry is demanding more data storage for this reason and two-dimensional (2D) codes and stacked (composite) codes are the perfect solution. Although one-dimensional (1D) bar codes are still used, 2D codes can store up to 1,800 characters of text versus approximately 30 characters in 1D codes. 2D symbologies are quickly becoming the standard for applications that require storing large amounts of data, such as on patient wristbands or medications.

Since bar code readers are built with different reading capabilities, selecting the right reader depends on which symbologies need to be read and the environment where it will be used. For instance, linear imagers are perfect for laboratory

and administrative applications due to the common usage of 1D codes. In contrast, a 2D area imager is generally needed in patient care activities due to the mixed use of both 1D and 2D bar codes.

Datalogic Scanning designs and manufactures both 1D and 2D readers, which are available from value products to fully featured premium products. The wide array of available solutions allows Datalogic customers to select the right scanner for very different applications, environments and bar code scanning needs.

Additional Resources

Industry Resources for Established Bar Code Symbologies:

- AIM Global - <http://www.aimglobal.org>

Industry Resources for Global Standards and Solutions:

- GS1 - <http://www.gs1.org>

Datalogic Scanning White Papers:

- The Growing Requirements for 2D Imaging Technology
- Selecting the Proper Radio Technology to Meet Your Mobile Data Collection Needs

To download these White Papers and other information, visit the Datalogic Scanning web site at www.scanning.datalogic.com



Product Recommendations

Recommended Solution

Gryphon™ Series

- A wide variety of model and technology options, packed with features and functionality for healthcare applications.
- Disinfectant-Ready enclosure option withstands cleaning solutions commonly used for healthcare.
- Mobility options include the Datalogic STAR Cordless System™ narrow band radio or Bluetooth® wireless technology.
- Datalogic Scanning's patented Green Spot good-read indicator improves user feedback in quiet hospital environments.



Alternative Product Suggestions



Also in black.

Magellan 1100i shown with optional tilting stand.



Also in black.



Administrative Environments

Magellan™ 1100i

- Digital Imaging Technology - No moving parts for improved reliability.
- Omnidirectional scan volume is ideal for presentation and sweep scanning.
- Small footprint for space constrained locations.
- Ergonomic design for hands-free or handheld use.
- Datalogic Scanning's patented Green Spot good-read indicator improves user feedback.

QuickScan™ QD2100, QD2300

- Economical scanning solution available with Linear Imaging (QD2100) or Laser (QD2300) technology.
- Durable and dependable.
- Quick and efficient readers are lightweight and simple to use.

Inventory Management Environments

PowerScan™ 7000 and 8000 Series

- Top performance in tough environments, such as pharmaceutical manufacturing, sterile processing and laboratory services including cold storage.
 - Mobility options include the Datalogic STAR Cordless System™ narrow band radio or Bluetooth® wireless technology.
 - Datalogic Scanning's patented Green Spot and 3GL* good-read indicator improves user feedback .
- (*3GL available with 8000 series only.)

Benefits of Automatic Identification

Real-Time Communication: Bar code readers provide an efficient and accurate real-time communication platform by collecting, analyzing and reporting information at the source. Datalogic Scanning's readers can eliminate costly communication breakdowns and allow the medical staff to make informed decisions based on up-to-the-minute data as opposed to partial and outdated information.

Speed and Accuracy: In an industry where every second counts, healthcare facilities need technology to promote speed during activities. Bar code readers from Datalogic Scanning are known for their high performance capabilities with quick scanning rates and outstanding reliability. Not only are these readers fast, but they provide completely accurate data capture and recall, which is the most critical component to look for when selecting a bar code reader for a healthcare environment.

Productivity: Bar code technology has completely transformed manual data collection and entry. By capturing and communicating data from the source, medical professionals are able to perform the same tasks with more productivity. Eliminating time-consuming manual processes allows the staff to spend more time working directly with patients, diagnosing and treating symptoms. Increased productivity reduces costs, which provides clear benefits to the medical facility.

Selecting a Partner

Datalogic Scanning has an established partner network that provides exceptional levels of support to customers interested in purchasing Datalogic Scanning products. Our partners can provide services such as fast delivery, technical support, vertical applications and solutions, configuration assistance, integration, financing as well as educational programs and partner marketing.



To determine the type of partner you need, look closely at what is needed to fulfill your business requirements. For example, if you need to replace hardware for your current data collection system, a technology partner such as a Systems Integrator would be appropriate to manage the installation, ensure compatibility with the existing infrastructure and provide training and on-going support.

Datalogic Scanning Representatives can assist your company in locating and choosing the appropriate partner to meet your current business needs.

Protecting Your Technology Technology Investment

Choosing a reliable product is just as important as selecting the right product for the application. All Datalogic products are designed and tested to rigorous industry standards to ensure years of trouble free operation. However, if a product fails, it is important to have a company whose service programs are as good as the product.

When it comes to the service of your Datalogic Scanning product, nobody can do it better than us. We are the company that designed and built your data capture product and we have the highest expectations regarding its performance. No other service provider can deliver the years of experience, quality assurance, access to factory upgrades and cost savings for your Datalogic Scanning product.

EASEOFCARE Maintenance Agreements are price-competitive programs that offer a range of service levels for maximum flexibility. Maintenance agreements provide a predictable way of managing equipment maintenance costs and ensures that your products are repaired quickly, if needed. Product coverage is guaranteed and covered products receive top priority in repair scheduling, resulting in the fastest turn around time possible.



www.scanning.datalogic.com

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