

Adaptus™ Imaging Technology Delivers Performance and Versatility

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Introduction

The health and vitality of an industry can be measured by the rate and magnitude of its technical innovation. This innovation fuels economic growth, enables new and exciting applications, and gives consumers increasingly better product choices. The natural evolution of technology and its effect on economics was termed “creative destruction” in 1942 by the economist Joseph Schumpeter. In his landmark paper “Capitalism, Socialism and Democracy,” Schumpeter explained, “The interaction of technical innovation with the competitive marketplace is the fundamental driving force in capitalist industrial progress.” (Schumpeter, 1942). Said another way, it is necessary to leave older technology behind in favor of bright innovations that fuel economic growth.

Schumpeter makes the point, for an industry to grow, its technology must continuously offer customers a choice of improved function and performance beyond their current implementation. It is this philosophy that drove the development of Hand Held Products Adaptus Imaging Technology. The high performance and versatility of this innovation delivers an improved choice over laser scanning for today’s data collection customers. Adaptus Imaging Technology serves today’s data collection needs while providing capability required for the future, thereby offering extraordinary value to the customer.



Figure 1 – Adaptus Imaging Technology is delivering a data collection capability that is characterized by high performance, versatility, and extraordinary value.

What is Adaptus Imaging Technology?

While Hand Held Products has been delivering high performance and versatile products for many years, this next generation of data collection solutions, powered by Adaptus Imaging Technology, sets a new standard for customer value. When applied to applications, Adaptus Imaging Technology delivers:

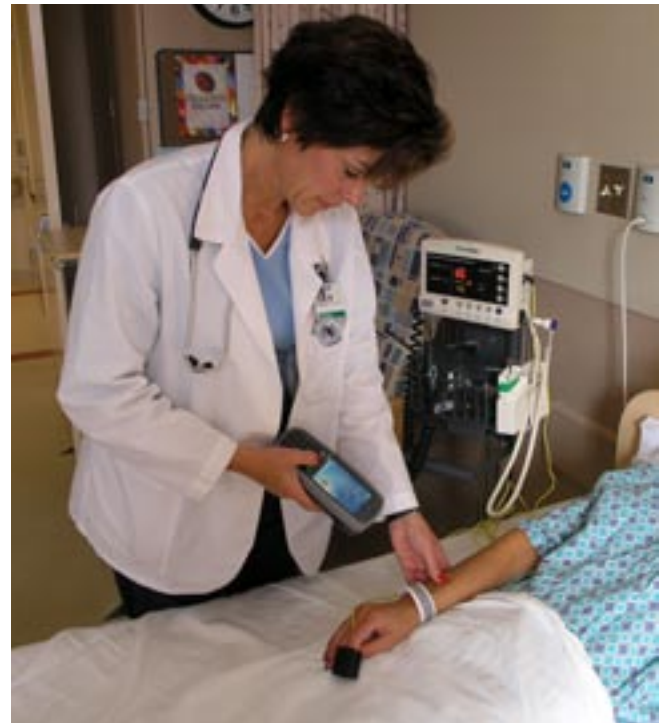
High Performance - Even for traditional data collection needs, the high performance reading of Adaptus Imaging Technology enhances ease of use regardless of data collection conditions or environmental challenges.

Versatility - The multiple functions delivered by Adaptus Imaging Technology allows one data collection device to serve many purposes. It is the versatility of this technology platform that serves a broad base of today's needs - while preparing users for future challenges and applications.

Adaptus Imaging Technology High Performance

The high performance of Adaptus Imaging Technology delivers aggressive read rates and depths of field on 1D, 2D, PDF417, stacked linear, and matrix codes. This aggressiveness applies even in challenging reading environments where lighting conditions might be difficult and bar codes of poor quality. This high performance and aggressive behavior over a broad range of targets and environments delivers the most important benefit: product ease of use in many applications. The buying agent and end user does not need to wonder if the Adaptus Imaging Technology reader will do the job as conditions (bar code density, ambient light, and required depth of field) change. They can just be confident that it works.

The Hand Held Products IT5600 linear imager clearly demonstrates the adaptive nature of the technology by delivering world-class performance on high-, medium-, and low-density bar codes all through one device. The product delivers 5 inches of depth of field on 5 mil codes; 23 inches depth of field on 13 mil 100% UPC; and between 40 and 60 inches on 55 mil bar codes depending on ambient lighting. Couple this robust depth of field performance with the ability to read low quality bar codes that may be damaged or low contrast. The result is a user-friendly product that can adapt to any scanning application.



Figures 2 & 3 – Adaptus Imaging Technology delivers performance that enables a single device to service an application with challenging and diverse requirements.



Figure 4 – Hand Held Products IT4000 and IT5000 Mini Engine Series is a critical Adaptus Imaging Technology building block. Implementing a CMOS camera, it is the eyes of the Adaptus Imaging Technology platform.

Adaptus Imaging Technology Versatility

Adaptus Imaging Technology also delivers a rich and diverse set of functions beyond linear bar code reading. The additional functions enable a single device to be used in many applications, including those that may not be presently known. Adaptus Imaging Technology enables a device to serve the users application today, no matter how diverse, while providing additional functions for future needs.

For example, think of a package delivery application that reads linear and PDF417 bar codes today, but may require converting to Data Matrix in the next five years to consolidate the number of bar codes on a package. Adaptus Imaging Technology enables world class linear and PDF417 reading today, but preserves the product investment by providing Data Matrix functionality as well.

“... a normally healthy economy was not one in equilibrium, but one that was constantly being disrupted by technological innovation.”

Adaptus Imaging Technology

The power of Adaptus Imaging Technology is delivered by the three critical technology building blocks: innovative electro-optics, leading edge computing architectures, and fourth generation decoding and image processing. These three components are the result of thirty years of Hand Held Products design and manufacturing perseverance. They are tightly integrated to provide high-end performance and rich, reliable functionality.

The IT4000 and IT5000 Miniature Image Engine Series best represents the innovative optics of Adaptus Imaging Technology. This product combines a digital camera, illumination, and aiming optics in a package roughly the size of a sugar cube. These critical components are creatively packaged to provide high image quality and to be the eyes of the Adaptus Imaging Technology platform.

The brain of Adaptus Imaging Technology is its leading edge computing architecture. With a 32-bit processor at its core, and other state of the art components, the architecture is expertly balanced to deliver high-end processing performance while being considerate of battery consumption.

The logic that is processed by the Adaptus Imaging Technology brain is Hand Held Products fourth generation decoding and image processing. This software defines the personality of Adaptus Imaging Technology by enabling aggressive decoding, even in difficult environments, and a rich base of functionality beyond linear bar code reading. The efficient design of the software further enables robust algorithms that emphasize read rate and accuracy.



Figure 5 – The image processing of Adaptus Imaging Technology enables fast, accurate decoding in all environments. In this figure, the software locates the center of the symbol and determines its orientation.

Adaptus Imaging Technology Features

Adaptus Imaging Technology delivers extraordinary reading performance to enable ease of use and versatility. These end user benefits are delivered by the following Adaptus Imaging Technology features:

Linear Imager Products (IT5600, IT5620, IT5800, IT5830)

- Industry leading depth of field on high, medium and low-density bar codes, all in one device
- Extraordinary read rate
- Aggressive reading of poor quality codes
- Ability to read future codes

Area Imager Products (IT4000 and IT5000 Mini Engine Series, IT4500, IT4600, IT4620, IT4800, IT4830, Dolphin® 9500 Series, Dolphin 7900, Image Kiosk 8870/8560)

- Competitive linear bar code scanning
- Industry-leading PDF417 reading
- Aggressive reading of specialty codes like matrix, postal, and OCR
- Picture taking for processing, storage and retrieval
- Capture, correct, and compress signatures
- Omni-directional reading of all codes
- Reading multiple symbols with one trigger pull



Figure 5 – Adaptus Imaging Technology enables image capture as a data collection function. Image capture is used to record an event or exceptional condition.

Conclusion

Adaptus Imaging Technology from Hand Held Products is the next logical progression in innovative data collection solutions. It is the creative choice that favors high performance and versatility over solitary functionality. With Adaptus Imaging Technology powered products, customers can confidently use image-based data collection while expecting extraordinary value. They know they are working with a company dedicated to imaging. They will know they are working with the imaging leader. They know they can depend on imaging solutions from Hand Held Products.



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