SWIFTDECODER™ BARCODE DECODING SOFTWARE EFFECTIVELY READS POOR QUALITY BARCODES

Application Note

Achieving a successful barcode implementation depends on the ability to capture barcodes quickly and accurately. Projects that measure return on investment will study the impact of non-reads and mis-decodes on the business. In many cases, poor quality barcodes can limit the ability to read codes, which leads to a higher rate of keypad entry, lower productivity, and a higher error frequency.

Ideally, every symbol in circulation would be printed in adherence to the barcode encoding rules. Unfortunately, these efforts are thwarted when a third party is feeding imperfect symbols into your environment, or when a printer is out of adjustment. Common problems include low contrast printing, bar growth, insufficient quiet zone (blank area around the barcode), or printing on challenging surfaces which may be curved, textured or glossy. Moreover, packages come in a variety of shapes and sizes, suppliers don't always verify the barcodes they print for compliance, and symbols can be damaged during shipping and handling. In these situations, many printed barcodes can be seemingly unusable.

This application note will review several types of poor barcode conditions that can occur, including:

I. Damage or Distortion

II. Poor Contrast

III. Challenging Package Shapes and Materials

Honeywell SwiftDecoder™ Barcode Decoding Software's robust algorithms find and decode barcodes under many adverse conditions to successfully deliver return on investment in real-world situations. All of the barcodes in this application note have been successfully tested by Honeywell.

FEATURED SOLUTIONS

SwiftDecoder Wedge (SDW)

SwiftDecoder Mobile (SDM)

SwiftDecoder Standalone (SDS)

Honeywell

I. DAMAGE OR DISTORTION (SEE FIGURE 1.)

As barcodes can be exposed to many types of environmental conditions, they naturally degrade over time. Damage to barcodes may occur during their movement through the operations process and distortion may occur due to production area temperature changes. Any kind of damage to a barcode, such as scuffs, marks, scratches, stains, blotches, or poor ink distribution (often a common printing defect) affects readability and can result in a non-read, or worse, a mis-decode, all impacting profitability.

Honeywell Solution

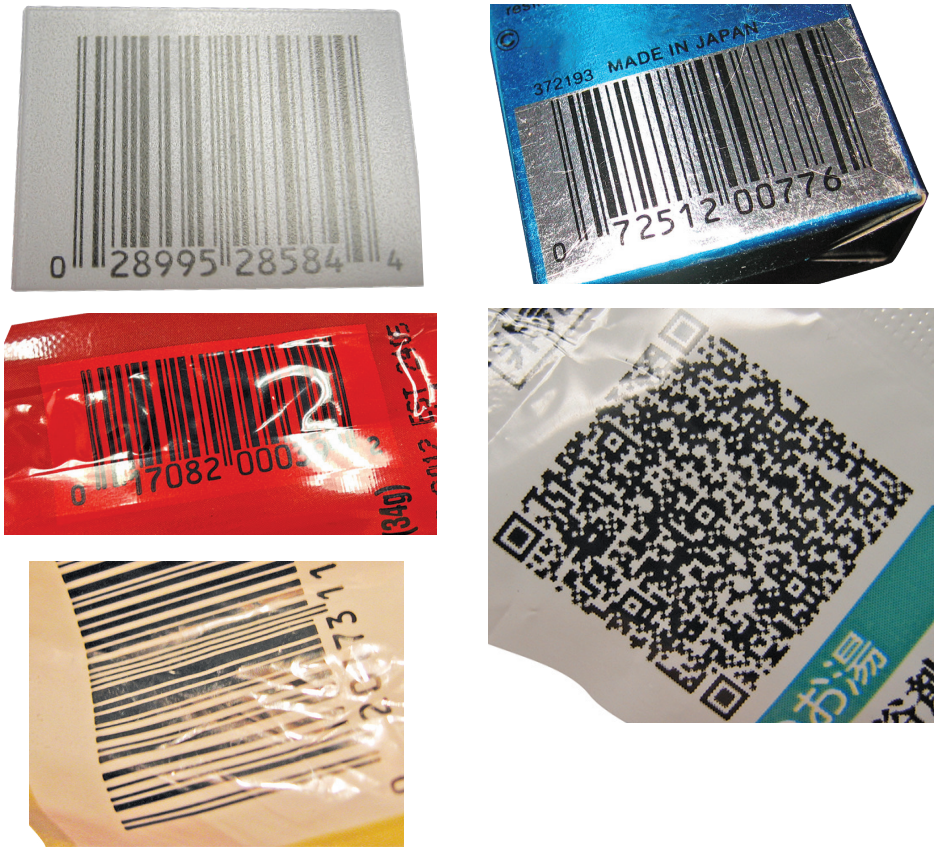
For more than 25 years, companies have been using Honeywell solutions in their mission-critical scanning applications. They have pushed us to solve their toughest barcode reading challenges. In many cases, our customers do not print their barcodes, and they cannot control the condition of the barcode throughout its journey to the point of reading. They have come to rely on Honeywell's robust algorithms to find and decode damaged and distorted barcodes.

FIGURE 1. DAMAGED OR DISTORTED BARCODES

II. POOR CONTRAST (SEE FIGURE 2.)

Barcode reading technology is fundamentally based upon the ability to detect both light and dark barcode elements. If dark barcodes are printed on a dark substrate or light barcodes are printed on a light substrate, the scanner has difficulty discerning the barcode from the background, which typically results in a non-read. Readability is also affected if the barcode is placed onto a busy background, or if lighting conditions cause a reflective or shadowed condition.

FIGURE 2. BARCODES WITH POOR CONTRAST



Honeywell Solution

SwiftDecoder™ Barcode Decoding was designed and built from the ground up to work much the way the human eye is able to detect small changes in light, and to tolerate bright reflections. SwiftDecoder reads low contrast barcodes with enhanced speed and better accuracy than most other solutions.

III. CHALLENGING PACKAGE SHAPES AND MATERIALS (SEE FIGURE 3.)

Barcodes are typically easy to read if they are on paper or are perfectly presented to the imager. However, most barcodes are placed onto packages that come in many shapes and sizes, or are made of many different types of materials, which can often make readability difficult or impossible for typical barcode readers.

Honeywell Solution

Whether it is a barcode symbol that wraps around a curved object, or a 2D barcode on a driver's license that has become warped over time, SwiftDecoder's algorithms are more tolerant of curvature and other distortions.

FIGURE 3. BARCODES WITH CHALLENGING PACKAGE SHAPES AND MATERIALS

SWIFTDECODER BARCODE DECODING SOFTWARE OVERVIEW (SEE TABLE 1.)

Barcode reading solutions are not measured on how well they read perfect, flat, black and white barcodes. In the real world, barcodes arrive at the point of scanning with numerous forms of damage, distortion, and other quality issues. Honeywell engineers have been responding to these challenges, and, over time, have developed a more reliable and robust set of barcode recognition algorithms. Choose Honeywell SwiftDecoder so you can rest assured that your workflow remains more effective and efficient.

Contact Honeywell for no-cost evaluation SDKs for all of these SwiftDecoder Solutions.

TABLE 1. SWIFTDECODER BARCODE DECODING SOFTWARE SOLUTIONS

SWIFTDECODER WEDGE	SWIFTDECODER MOBILE (SDM) SDK	SWIFTDECODER STANDALONE (SDS) SDK
		
SwiftDecoder Wedge is a barcode scanning application utility that allows users faster and more accurate data input to specific form fields, with no changes to existing apps, plus faster deployment to employees without requiring dedicated hardware. A web-based portal to a cloud platform allows an administrator to flexibly configure and manage off-the-shelf mobile devices, including key authentication and license purchase. These mobile devices download the keyboard utility app from the online app stores, and Honeywell provides the usage billing.	**SwiftDecoder Mobile (SDM)** is designed for programmers who need to add professional barcode decoding to their custom apps that run on mobile devices. Originally developed for mission-critical, high-speed conveyor reading applications, now that same performance and reliability are available for mobile devices. Developing high speed barcode applications is easier because **SwiftDecoder Mobile (SDM)** manages the challenging task of acquiring barcode images and managing the mobile device's camera system. **SwiftDecoder Mobile (SDM)** provides the essential tools needed to automatically acquire and integrate images with the decoding logic, allowing programmers to focus on business logic and other important aspects of the mobile application. Workers can utilize all the functionality of a Honeywell barcode scanner or purpose-built mobility device directly on their mobile phone or tablet. **SwiftDecoder Mobile (SDM)** for mobile platforms includes Apple® iOS®, Android™ and Windows™ UWP (Universal Windows Platform).	**SwiftDecoder Standalone (SDS)** is a stand-alone decoder that is designed for programmers who need to customize their applications to meet specific image acquisition requirements. Choose **SwiftDecoder Standalone (SDS)** when your requirements call for a specific image acquisition system such as a special high-speed camera or a purpose-built industrial camera system. **SwiftDecoder Standalone (SDS)** runs on Windows™ Desktop and Linux Foundation™, or can be built for your embedded platform.

KEY FEATURES

- **Faster:** Provides mobile barcode scanning with snappy performance and fixed scanners with faster decode times.
- **Aggressive:** Improves end-user read rates of damaged and poorly printed real-world bar codes.
- **Autodiscriminates:** Automatically identifies symbology and then decodes.
- **Mirror image processing:** Reads and decodes inverted barcode images.
- **More accurate:** Reduces costly errors by minimizing barcode misreads associated with other decoders.
- **Omni-directional:** True 360° omni-directionality enhances ease-of-use and enables successful first-pass reads.
- **Enhances portability:** Available for mobile platforms including iOS, Android, and Windows 10, plus industrial cameras, Windows desktop, and purpose-built devices.
- **Global support:** Work directly with Honeywell's developers to shorten development and implementation time.

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FOR MORE INFORMATION

For no-cost evaluation SDKs for all of these SwiftDecoder solutions, application assistance, current specifications, pricing, or name of the nearest Authorized Distributor, contact your local sales office. To learn more about Honeywell scan engines and barcode decoding software, visit our website.

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