

Complex Bar Code Reading Simplified

Bar codes have become popular as a convenient, automatically identifiable means of storing product information. From the manufacturing floor to the grocery store, bar codes help vendors manage inventory, identify products, and track buying trends.

The type of bar codes you are used to seeing on food or computer products are linear. However, these one-dimensional symbols -- a block of vertical bars of varying widths -- take up a lot of space and cannot store all the information needed to identify small parts like computer chips.

Researchers are now looking into displaying this information on a two-dimensional plane. 2D bar codes look like a checkerboard, and contain six to eight blocks that make up a character, which corresponds to a certain part of the product information. Each of the 2D bar codes contains a series of characters -- a compacting of the message along with some error correcting characters.



**An example of 2D bar codes
that the Computer Identics
system reads**

Computer Identics Inc., a system developer in Canton, MA, embarked on a project to develop a system for reading two-dimensional bar codes. Computer Identics, which has been in the bar code system business for 25 years, began the 2D project with the Data Translation DT3852 ISA Bus frame grabber.

About 75% of the development was complete when Data Translation's [DT3155](#) PCI-based frame grabber came to the attention of Computer Identics. They switched the development project to the DT3155 in a Pentium PC, used Data Translation's Frame Grabber SDK™ for acquiring images and GLOBAL LAB Image for the image analysis. The engineers used Microsoft® C++ as the development language.

How the Computer Identics System Works

A manufacturer uses either a laser to etch a 2D bar code onto a part, like a computer chip, or a printing device to label a product, like a pharmaceutical. The bar code includes useful information, such as the name of the company, product identification data, and time made. The bar-coded product travels along a conveyor belt as an industrial camera strobos a picture of it. The DT3155 PCI frame grabber, installed in a Pentium PC, then collects and stores the images so that Computer Identics' custom software can access and read the individual pixels of the image. Each symbology is associated with a message, which can then be sent to a host system or to a user application.

While Computer Identics was pleased with Data Translation's DT3852 ISA frame grabber used at the start of the project, the upgrade to the PCI-based DT3155 provided the advantages of speed and lower cost. "It's quick, easy to install, and easy to use," Sweeney said. "For what you get, and the price, it's a great deal. You can't beat it."

For more information, click on [DT3155](#) or call (800) 525-8528.