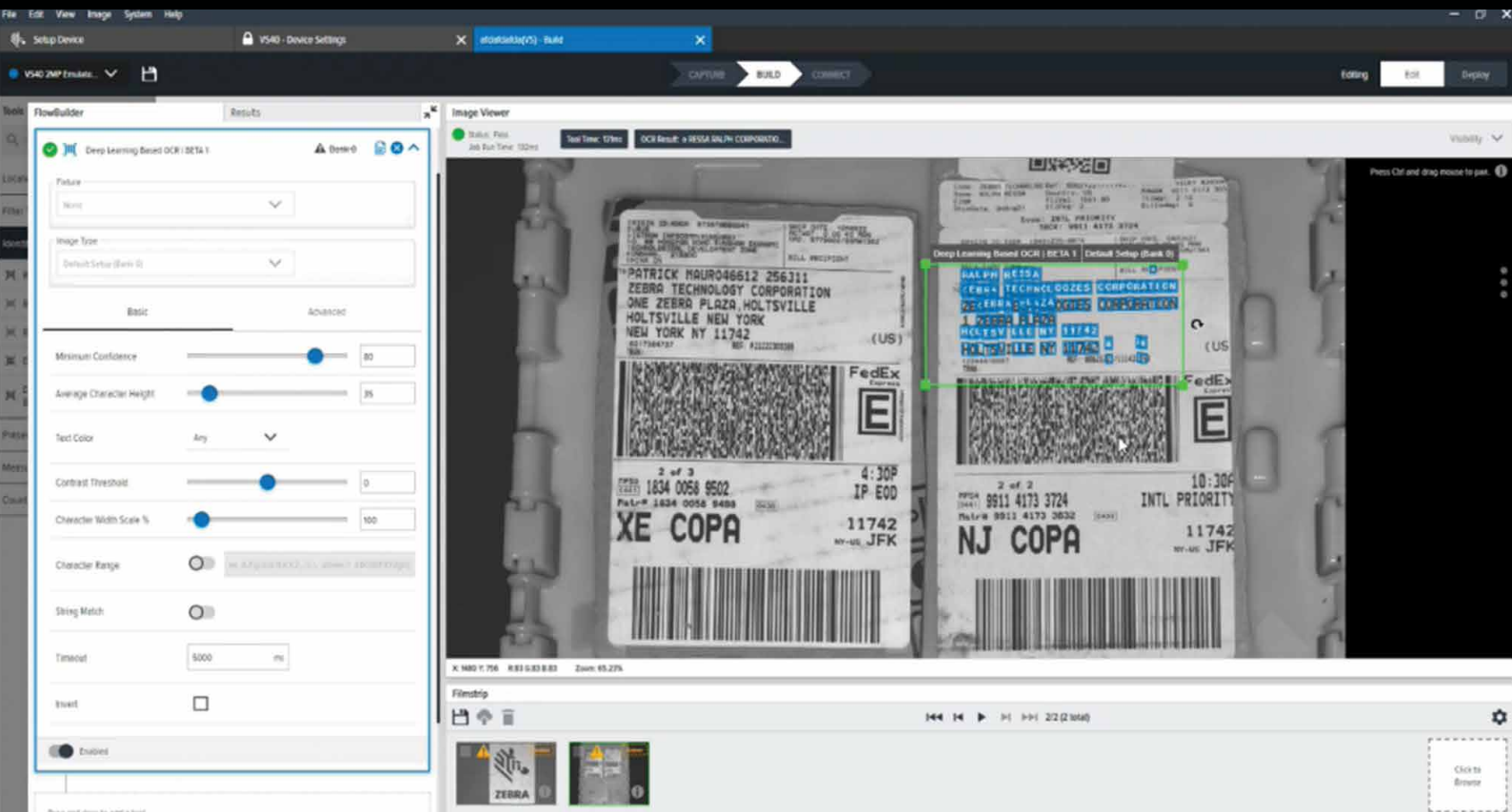




Zebra Aurora™ Deep Learning OCR Tool



Reliable, Accurate Reads Without Training



Zebra Aurora Interface - Deep Learning OCR job setup

Zebra Aurora software is a unified platform that gives end users of all skill sets control over all Zebra fixed industrial scanners and machine vision smart cameras, simplifying management of enterprise-wide manufacturing and logistics automation solutions. Among the software's many capabilities is optical character recognition (OCR), which automatically extracts information from images.

Oftentimes, training and retraining consumes a significant amount of time during OCR setup. Companies today need machine vision products that can dynamically adjust to such scenarios and deliver a reliable read. Traditional OCR applications may fall short when working with tough to read or low contrast characters on confusing backgrounds. With the new Deep Learning OCR tool, font training becomes redundant, as it delivers reliable, accurate reads without having to train numerous different texts or fonts. The tool leverages state-of-the-art techniques that allow novices to quickly and easily set up highly accurate text recognition and character reading applications.



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Approachability for End Users

End users unfamiliar with OCR technology or general machine vision may encounter challenges in system setup. Challenges that can impact success include how a code is printed, the type of surface its applied on, the way the code is illuminated, and the way its captured by the camera. The Deep Learning OCR tool removes these roadblocks. The approachable, easy-to-deploy machine vision system requires no coding or programming expertise. This allows companies to quickly install new deep learning-based OCR applications that could previously not be automated.



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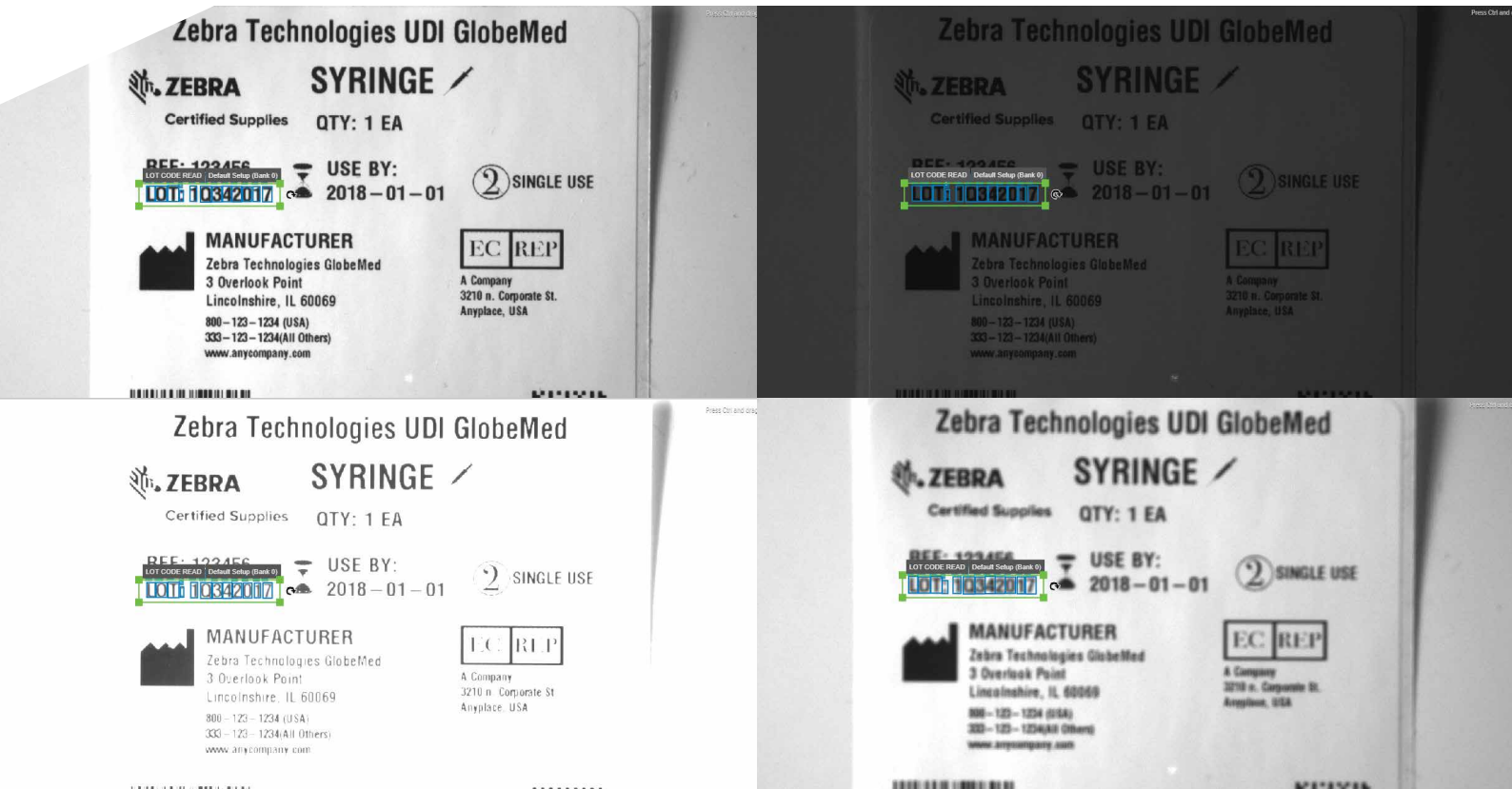
Swift Setup for Systems Integrators

For systems integrators, Zebra Aurora's Deep Learning OCR tool saves significant setup and deployment time. The software requires no font training. Most non-deep learning OCR technologies require samples of all potential OCR fonts — and all possible variations of a given font — and subsequent time spent training the software on them. Integrators might spend months setting up an OCR font because the system has not yet encountered a particular variant of letter, such as one that is rotated or skewed or stretched or compressed due to variations in line speed. Instead, the integrator can setup the scanner or camera and turn the intuitive interface over to a control engineer or another plant floor operator to begin using the deep learning-powered OCR tool.



As Simple as Drawing a Box

Zero Training for Faster Deployment



Zebra's DLB OCR Tool can handle a great amount of process variation. The robust and powerful algorithms ensure maximum readability and throughput.

Manufacturing and logistics environments need machine vision systems that offer flexibility and ease of use. Requirements can quickly change, or new parts can be introduced. Streamlining the process of adjusting an automation system helps make flexibility and ease of use possible. Zebra Aurora's Deep Learning OCR offers a pretrained model that allows users to deploy the tool directly on a camera, removing the time-intensive training portion of deep learning development entirely, including the training of new fonts or texts.

Ease of Use

Zebra Aurora's Deep Learning OCR tool was designed to allow end users to deploy machine vision systems quickly and easily. With Deep Learning OCR, users can draw a box around an image in the Zebra Aurora software and let the technology go to work. For any necessary adjustments, the tool offers a range of different settings, including changing character heights or string matching, in an intuitive, drag-and-drop interface. Instead of deploying complicated software that requires engineering expertise, Zebra Aurora is as simple as drawing a box.

Confident Code Reading

With the Deep Learning OCR tool, end users can set minimum confidence scores to ensure a reliable read. In addition, users can look at the overall confidence of a given string and then drill down to the character-to-character quality to ensure the algorithm is reading correctly and that the highest-confidence reads are being delivered and then make adjustments as needed.

Choose From a Range Machine Vision Toolsets

With the new OCR tool, end users can draw a box around an area of interest for fixturing, which also teaches the algorithm the fonts, and capture textual information from the image. End users also can set thresholds that will help differentiate between different character strings, such as mathematical, alphanumeric size, or spacing. In addition, decoder performance packages can be added to any FS fixed industrial scanner or VS smart camera once. End users also have a range of machine vision tool sets available to choose from.

Machine Vision Tool Sets (Decoder Package Included in Standard Tool Sets)

| Tool | Description | Sensor | Standard |
|-------------------------|--|--------|----------|
| Object Locate | Find high-contrast features | • | • |
| Pixel Counter | Count the number of pixels in a designated range | • | • |
| Brightness | Return the average brightness of an area | • | • |
| Contrast | Return the average contrast of an area | • | • |
| Edge Tool | Find edges for fixturing and presence/absence | • | • |
| Distance Tool | Measure the distance between two tools previously created | • | • |
| Advanced Pattern | Find challenging features with variant lights, scaling, occlusions, etc. | | • |
| Blob | Find, sort, and count areas with similar pixels | | • |
| 1D/2D/DPM | Read 1D, 2D, and DPM barcodes | | • |
| Find Circle | Find and measure circles | | • |
| Caliper Tool | Measure the distance by finding two edges | | • |
| Filters | Enhance image quality for robust inspections | | • |
| OCV/Flaw | Find residual or missing pixels from a trained shape | | • |

For more information about Zebra's Fixed Industrial Scanners and Machine Vision solutions, visit www.zebra.com/industrial-machine-vision-fixed-scanners



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