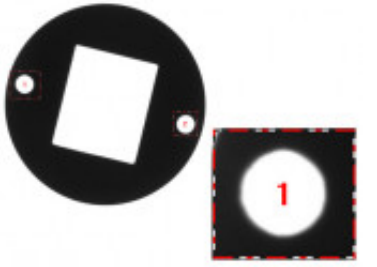


## mvIMPACT Match



The pattern matching module includes a set of functions to find predefined patterns in images. There are numerous applications for this task such as searching for objects, recognizing parts, and image alignment. To find the location of a specified pixel pattern in arbitrary images the algorithm is robust enough to tolerate varying luminance conditions as well as slight rotations of the pixel pattern.

The search speed can be optimized by the following search parameters:

- Search window
- Model's center point
- Acceptance level
- Certainty level
- Positional accuracy
- Number of matches
- Subsampling factor
- Step width
- Presetting model pixel

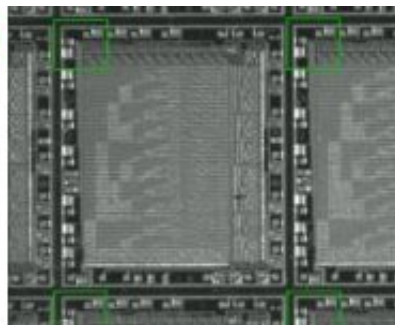
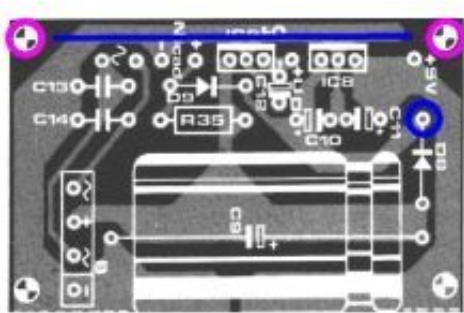
/\* \*/

- Details
- Downloads

Finding reference features in an image is an essential step in inspection and quality control. In frequent situations, ensuring that the parts are always presented to the imaging device exactly in the same position is not feasible. On the opposite, some amount of mechanical play is always allowed by the fixturing, or objects can be handled in bulk.

Pattern matching is a general purpose tool to find arbitrary shapes in an image and measure their position with high accuracy, allowing to adequately move regions of interest for further visual inspection. Pattern matching is also used for precise robot guidance.

In addition to location and registration, pattern matching can also be used for counting, absence/presence check and even recognition: a returned matching score allows assessing the resemblance of an occurrence with the original model.



alignment check

Frame type identification and



Score-based recognition

Learning

The training phase allows showing a sample image of the item to be matched. For convenience, the sample is usually taken from a rectangular region of interest. Anyway, any pixel can be assigned a "don't care" attribute, meaning that the shape and contents of the pattern can be arbitrary. The pattern center can be freely specified, too.

## Searching

The search takes place in a rectangular window. An arbitrary number of matching occurrences can be requested. After the search, the positions and scores can be queried.

## Accuracy, robustness and speed

The pattern matcher is exploiting all the gray-level information available. This means that interpolation techniques allow measuring positions with sub-pixel accuracy, possibly lowering the resolution requirement of the camera sensor.

The pattern matching algorithm uses the well-known normalized correlation technique. Changes in contrast or lightness will not influence the search at all, relieving from the need of strict illumination control.

When the pattern can be confused with other features in the scene, false matches can be discriminated by means of the search score.

For time performance optimization, a few relevant technical parameters are exposed to allow fine tuning and provide better control on the coarse-to-fine searching process.

## Datasheets

 [mvIMPACT 3D Display](#) | 46.8 kB

Datenblatt / Datasheet mvIMPACT 3D Display

 [mvIMPACT Barcode](#) | 101.8 kB

Datenblatt / Datasheet mvIMPACT Barcode

 [mvIMPACT Base](#) | 277.5 kB

Datenblatt / Datasheet mvIMPACT Base

 [mvIMPACT Blob](#) | 103.9 kB

Datenblatt / Datasheet mvIMPACT Blob

 [mvIMPACT Color](#) | 75.6 kB

Datenblatt / Datasheet mvIMPACT Color

 [mvIMPACT Data Matrix](#) | 56.2 kB

Datenblatt / Datasheet mvIMPACT Data Matrix

 [mvIMPACT Focus](#) | 126.4 kB

Datenblatt / Datasheet mvIMPACT Focus

 [mvIMPACT GMM](#) | 85.5 kB

Datenblatt / Datasheet mvIMPACT Geometric Model Matcher

 [mvIMPACT Match](#) | 145.9 kB

Datenblatt / Datasheet mvIMPACT Match

 [mvIMPACT Measure](#) | 60.5 kB

Datenblatt / Datasheet mvIMPACT Measure

 [mvIMPACT OCR](#) | 93.2 kB

Datenblatt / Datasheet mvIMPACT OCR

 [mvIMPACT e 2012-04 MR](#) | 509.7 kB

Datenblatt / Datasheet mvIMPACT

## Manuals

To be able to watch or download the manuals, you have to be [registered](#) or [logged in](#).

mvIMPACT Release / Beta for Windows XP, Vista, 7

You can evaluate mvIMPACT SDK for 30 days free of charge once. Afterwards, you will need a licence! If you are using a dongle for licensing mvIMPACT, you have to use the latest USB dongle in combination with the 64bit version!

 [mvIMPACT-6.8.461.6555-19823-x64](#) | 136,196.0 kB

mvIMPACT SDK 64 Bit **Release** Windows (XP, Vista, 7 / .NET 4.0 compliant, MSI, SDK Version 6.8.461.6555)

 [mvIMPACT-6.8.461.6555-19823-x86](#) | 131,760.0 kB


mvIMPACT SDK 32 Bit **Release** Windows (XP, Vista, 7 / .NET 4.0 compliant, MSI, SDK Version 6.8.461.6555)

mvIMPACT Nightly Builds for Windows XP, Vista, 7

Nightly builds are tested exemplarily and should be tested by oneself before use!


 [mvIMPACT-6.8.1148.7242-20516-x64](#) | 125,276.0 kB

mvIMPACT SDK **Nightly Build** (64 Bit, Build , Windows XP, Vista, 7)

 [mvIMPACT-6.8.1148.7242-20516-x86](#) | 121,328.0 kB

mvIMPACT SDK **Nightly Build** (32 Bit, Build , Windows XP, Vista, 7)

mvIMPACT packages for mvBlueLYNX-X

 [mvIMPACT-6.8.461.6555-19823-armv7a.tgz](#) | 24,012.6 kB

mvIMPACT (SDK Version 6.8.461.6555)

 [mvIMPACT Release Notes](#) | 52.8 kB

Stable feed:

- <http://beta.matrix-vision.com/mvblx-feed/stable/ipk/glibc/armv7a/base/>

mvIMPACT IPK packages for mvBlueLYNX



- [http://beta.matrix-vision.com/nightly\\_builds/](http://beta.matrix-vision.com/nightly_builds/)
- [Description of the packages](#)

USB dongle driver for Windows XP, Vista, 7

- [HASP driver](#) ([new dongle](#); external link)
- [Hardlock driver](#) ([old dongle](#); external link)

Subject to change without notice, Date 11/2011