Mapix (Microarray Image Analysis Software) FAQ's

What are the main features of Mapix?

➢ The « Gridding »

Mapix lets you define a grid on a scanned image so that you can identify each spot by assigning it unique coordinates. This feature is called spot addressing or gridding. Mapix uses a highly efficient algorithm to automatically insert user-defined or imported grids (in the form of GAL files generated by the spotter).

➢ The « Segmentation »

Mapix delimits the area of each spot with respect to the slide. This feature is called foreground segmentation (the foreground containing the spot as opposed to the background noise). Mapix generates the digital mean and median values of the signal from spot pixels and of the local background noise (delimited by the grid), as well as various other parameters such as the standard deviation of spot pixel brightness values and signal-to-noise ratio. The results file generated by Mapix can be exported in text, GPR formats.

➢ The « Flagging »

Mapix lets you pinpoint unusable spots—for example where there is no spot or the slide area is covered by noise—with a flagging system that assigns a numeric quality code to aid filtering out of non-significant data. Mapix also marks spots so that you can sort them when analysing results. The results file contains a "flag" column indicating a value for each spot :

Code	Signification
0	spot not flagged
100	good spot
–100	bad spot
–50	spot not found
–75	no spot

➢ The « Batch Processing »

The batch mode option lets you automate processing to support high-data-rate microarray analysis. Batch processing consists in setting parameters to scan and analyse large numbers of biochips according to their type, to automatically generate results files.

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What data visualization modes does Mapix provide?

➢ The Histogram

Mapix automatically plots a histogram of the pixel brightness distribution for each wavelength, thereby helping you to define your biochip read settings.

What data import format does Mapix use?

➢ GAL file format

Mapix uses a microarray industry-standard import file format containing lists that describe biochip spot positions and content.

What data export format does Mapix use?

➢ GPR file format

Mapix uses a microarray industry-standard export file format containing all spot quantification data.

What type of images can Mapix record?

➢ TIFF format

Mapix records images in TIFF format (Tagged Image File Format (.tif)). TIFF is a special, lossless format able to record one or more images along with a set of other information stored in "tags". For example, when Mapix records images acquired at 2 given wavelengths, it creates a single TIFF file containing the 2 images (unless the user configures it to generate 2 separate files). In both cases, the acquisitionparameters are stored in the tags.

➢ JPEG format

Mapix can also record images in JPEG format (Joint Photographic Experts Group (.jpg)). This format, which has become popular in particular through increasing use of digital photographic cameras, generates a lossy, compressed image. The file is therefore smaller, which is only useful, for example, when inserting images in a presentation or report. JPEG images cannot be used to obtain biological experiment results. They are therefore no substitute for acquired TIFF images, which are not compressed and contain usable values.

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How big are images generated by Mapix ?

Mapix lets you scan either a full standard slide (1x3'') or a portion of it, so the size of the image depends on the size of the area scanned.

The table below gives full-slide scan times and image sizes according to the pixel size for both detection channels (635 nm and 532 nm).

	3 µm	4 µm	5 µm	10 µm
Scan time (min:sec)	11:06	8:20	6:40	3:20
Image size (Mo)	653	368	235	59

What operating systems support Mapix ?

Scan Resolution	Image size (two-color scan)	JVM memory size	Windows 2000 Windows XP Linux x86 32 bits JVM	Windows XP x64 Edition Windows Vista Linux amd64 64 bits JVM
3 µm	7333x23333 pixels	~2300 MB	✗	✓
4 µm	5500x17500 pixels	~1300 MB	✓	✓
5 µm	4400x14000 pixels	~900 MB	✓	✓
10 µm	2200x7000 pixels	~256 MB	✓	✓

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