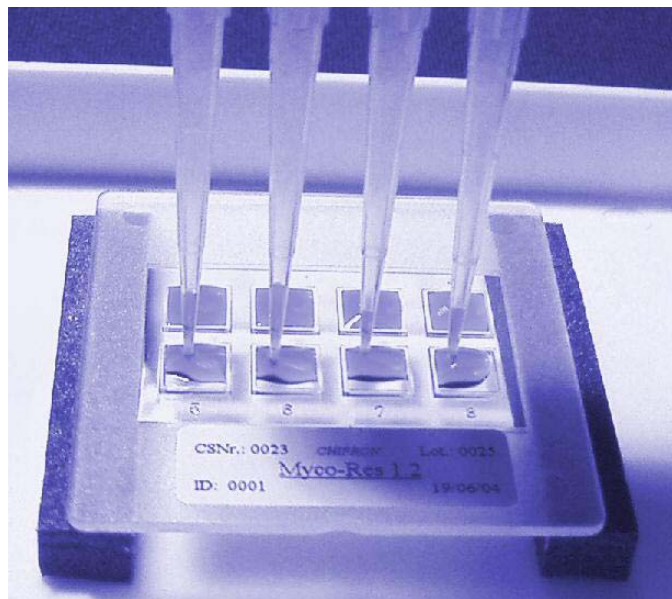


Instructions

for

Online Analysis Module



Introduction

The Online Analysis Module has been developed to provide our customers with an easy and convenient tool to extract the hybridization results generated by the variety of available LCD-Arrays. It allows you to load a grayscale JPEG image of the chip of interest into your browser window and to overlay it with the corresponding pattern file. By simply moving the mouse cursor over the respective spot you will obtain the information of all spot identities. Moreover, by clicking on the identified spot positions you can generate a comprehensive data report including the results, the sample names, the chip ID, Lot number and the raw image.

Requirements

All you need is a transmission light scanning device which provides you with a grayscale JPEG image of the 36 x 24 mm reaction zone of an LCD-Array, a PC with internet connection and MS Internet Explorer 6 or higher, LCD-Arrays and your password (requires registration via www.chipron.com).

The Image

The image has to be in JPEG format and will preferably be a grayscale image with dimensions of 800 x 550 pixels. Other dimensions or colored images will also work but might reduce the performance. It is essential that the image is equatorially aligned as described in figure 1. If the images generated by your scanning device are rotated or show a deviation from a perfect equatorial alignment, use a standard photo processing software to align the picture prior to analysis (e.g. Adobe Photoshop Elements, provided with your scanner from Chipron).

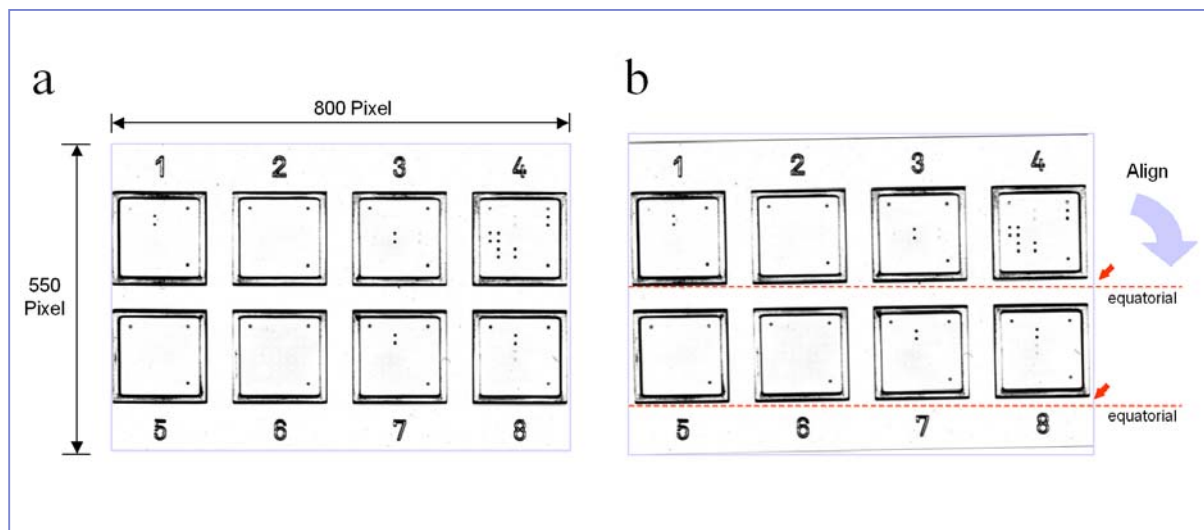


Figure 1: a) optimal image dimensions, b) equatorial alignment of a rotated image

Registration and Data Safety

The registration via www.chipron.com will help us learn more about the interest in our products and the global distribution and professions of their users. At no time will this data be made available to third parties or used for other purposes than internal statistical analysis. Your images, results and data reports will not be saved or viewed during or after your login by Chipron. However, the internet can generally not be considered as a save platform for data transmission and therefore, Chipron can not guarantee that the information exchanged via our web page will not be visible to third parties.

Login

Following your registration you will obtain a user name and a password which will be sent to the email address specified in the registration form. Enter the *Online Analysis Module* via the Login button on the OAM window of the Chipron web page and enter the user name and password.

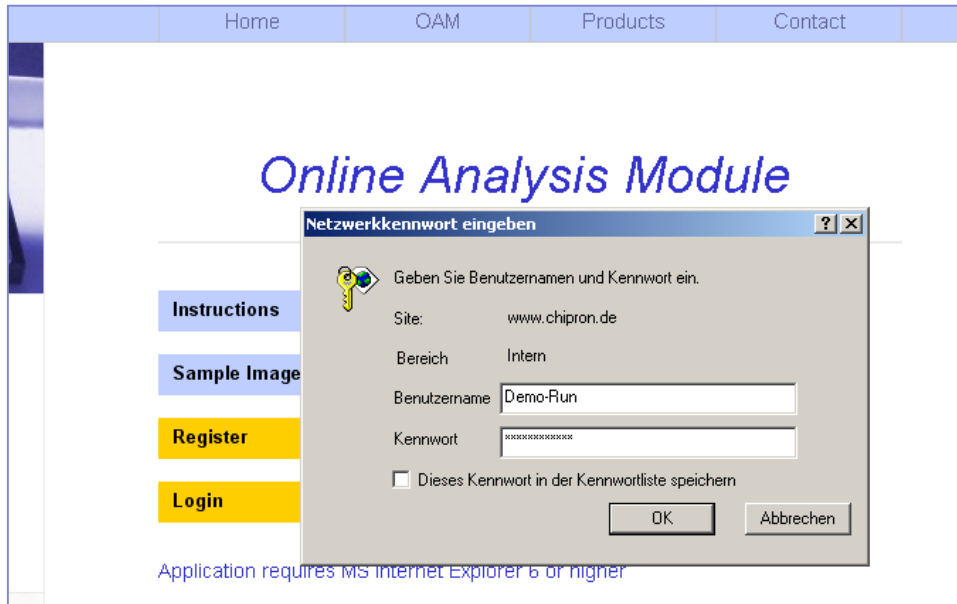


Figure 2: Login dialogue.

Operator Window

You will be directed to the operator window where you can enter the path to the destination folder on your PC where your image is stored, choose the corresponding pattern file (e.g. 00055 HPV 2.5 for the analysis of an LCD-Array HPV 2.5) and specify the Lot number and the ID of the chip in use.

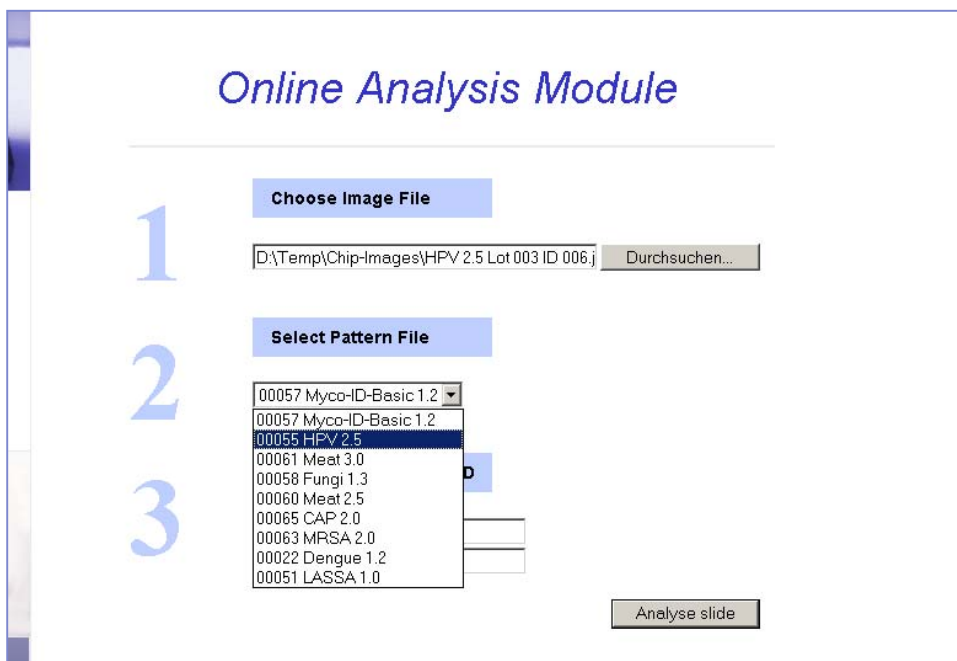


Figure 3: Operator Window.

Analysis Window

In the Analysis Window you will see your image, the overlaid grid pattern and a table with cells for the results of all eight fields. Before the results can be analyzed, the overlaid grid has to be aligned to fit over all eight arrays of the image. Therefore, the three corner circles of each sub-grid, displayed in red, must be positioned over the three guide dots present in each field. Three tools to move and stretch the grid are provided, as outlined in figure 4.

1. Before you can start the analysis all the red circles should be positioned over the guide dots

2. Grab the blue cross with the mouse cursor and move the whole grid around

1. Use the icon to move the whole grid around. Place the red circular icon over the left upper most guide dot position in field 1.

3. Grab the green triangle with the mouse cursor to stretch the pattern in field one. All other fields will follow.

4. Grab the orange triangle with the mouse cursor to stretch the whole grid along both axes

Figure 4: Positioning the grid.

Analysis

A quick overview of the signal identities can be obtained by moving the mouse cursor over the circle surrounding the respective signal. An info box will open, displaying the name of the corresponding capture probe and the coordinates (row and column number).

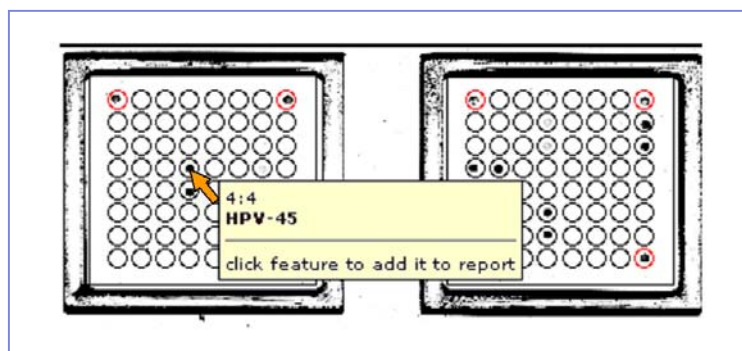


Figure 5: The Info Box for the spot identification.

Data Table

By clicking into the circles surrounding the positive signals the respective feature names will be displayed in the data table on the right side of the window. Although a feature name will be displayed only once within the data cell of a field it is recommended to click on all visible duplicates (see below). If a negative feature has been clicked accidentally, it can be deleted from the data table by a second click.

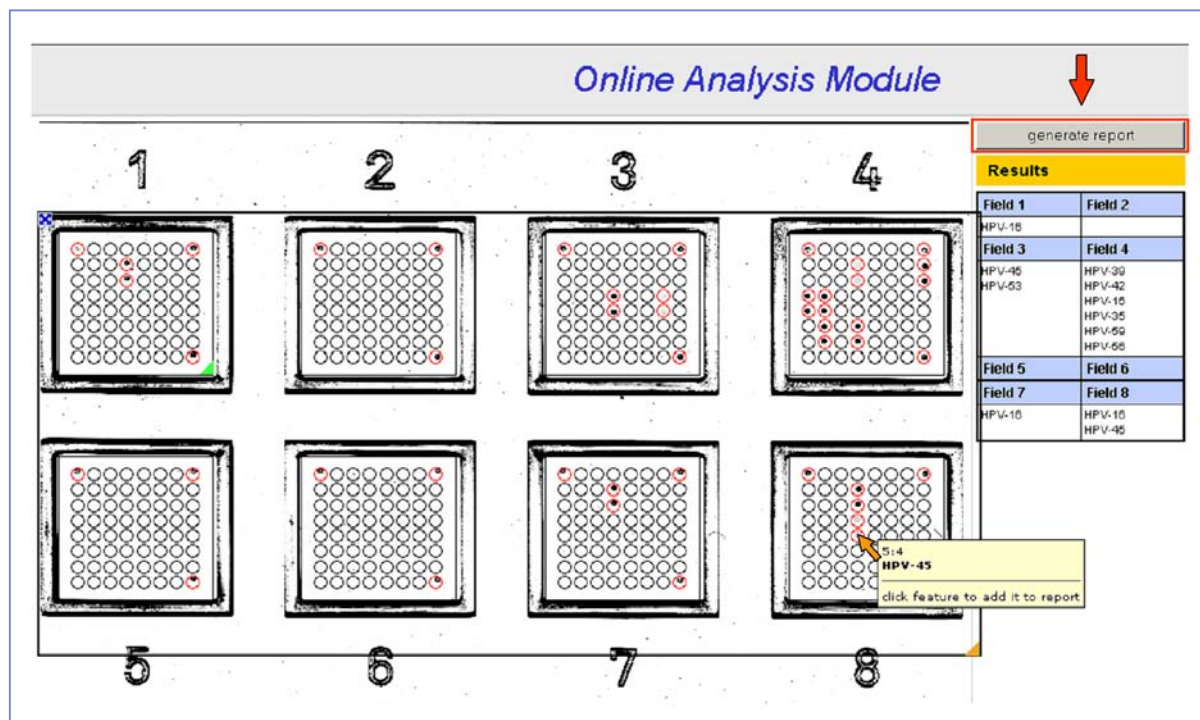


Figure 6: Add feature names to the result table and generate the data report.

Report

When all positive signals have been identified and included into the data table (clicked circles will turn red) you can generate a comprehensive data report by clicking on the “Generate Report” button, located above the results table (see figure 6). You will be directed to the report window. The report is formatted to fit on two pages when printed. The entire report can be viewed by scrolling down in the browser window. The first page shows the experimental data like chip ID, chip lot number, the raw image, the image name and the date of analysis, as well as blank lines where the sample names can be added after printing. The second page shows a graphic of all eight array patterns. Those spots which have been identified by the user and confirmed by mouse click will be highlighted in different colors. The result table below will list all confirmed spot identities (names), their coordinates within the array and the respective color code. To see both pages in printer layout just go into the drop down menu “File” of your browser window and select “Print Preview” (see figure 7).

See also the section “Color Code” below for an explanation of the generated table.

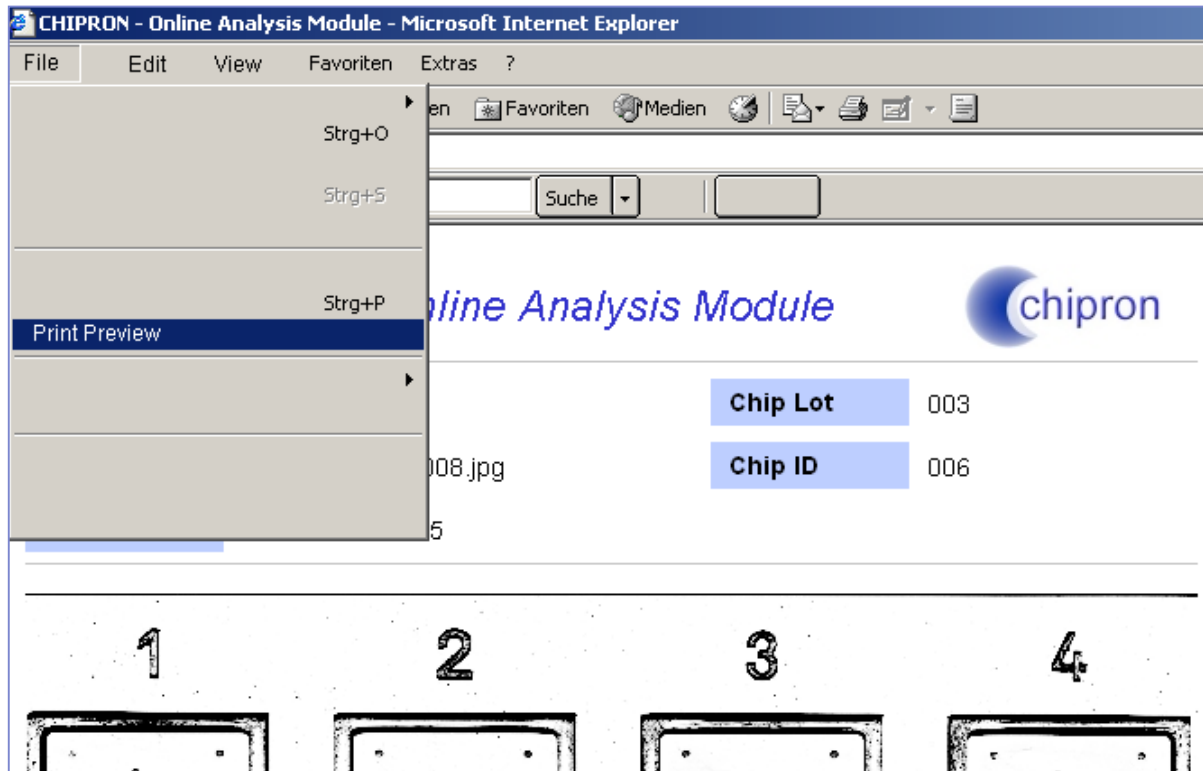


Figure 7a: How to enter the "Print Preview" page

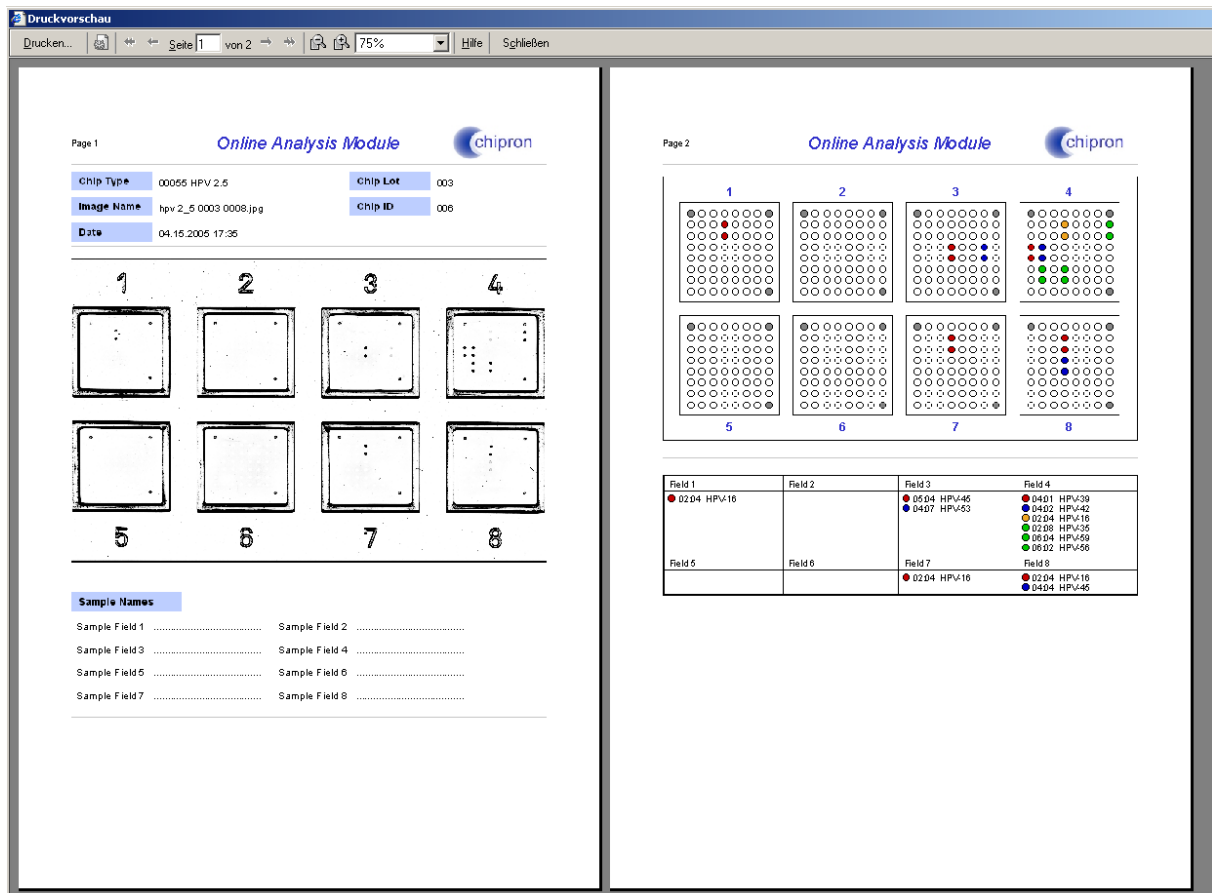


Figure 7b: "Print Preview" of both report pages

Color Code

Four colors can be assigned to the spots in each array field (red, blue, orange, green). The color red will be assigned to the first spot identified/clicked in a field. If the second spot clicked is a duplicate of spot one it will also appear in red (all clicked spots which represent the same capture probe sequence will appear in the same color). The next spot representing a new sequence will be displayed in blue, the next in orange and the next in green. If more than four different capture probes are selected, all following will be displayed in green.

By selecting/clicking the features within a field according to their observed signal intensity, the color code allows you to include this information into the result table.

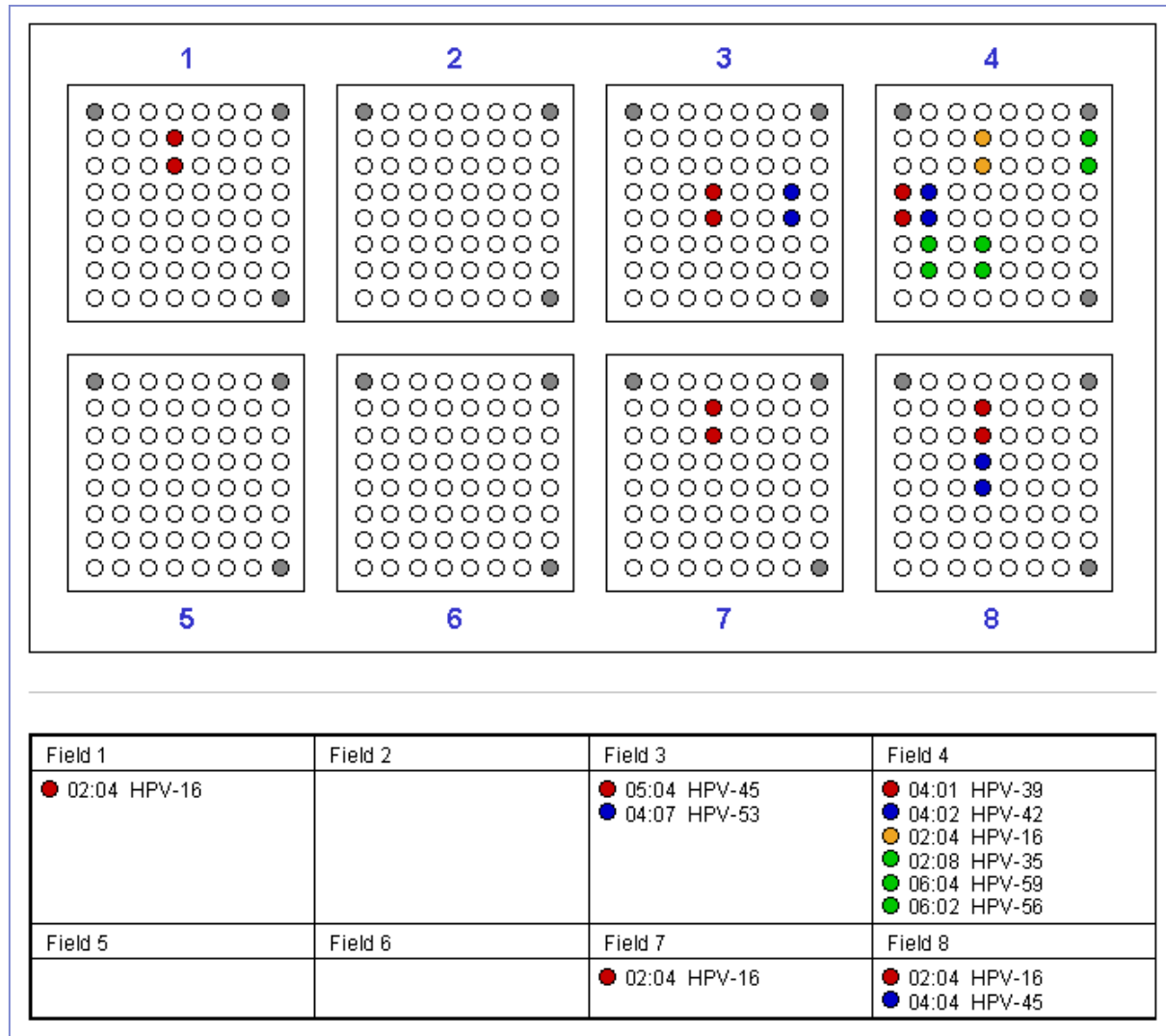


Figure 7b: "Color Code" and result table

Example Image

To test the working principle of the Online Analysis Module without having your own LCD-Array image, you can download a test image from the OAM window of www.chipron.com. Just right click on the "Sample Image" bar and select "save target as" to save the image on your hard-drive and then follow the instructions.

For help or further information about the Online Analysis Module contact support@chipron.com.