Leica DMS-Series/MC-Series

How to create and install customized overlays

Purpose

This document describes how to create and install customized overlays which can be imported into the Leica DMS-Series digital microscopes and Leica MC-Series cameras.

Overlays are images that can be superimposed over the live and/or captured pictures. Overlays can contain virtually anything, but usually contain a few elements such as a crosshair or company logo. To streamline the process, we recommend that you begin with an existing set of overlays, or modify one of our existing templates a according to your specific needs.

A total of 10 overlays can be stored in the Leica DMS300/DMS1000/MC120/MC170. Initially there are 4 factory default overlays which can be used as they are, or completely replaced with your custom overlay. To get you started creating your own overlays, you can download several templates from the Leica product pages of the Leica MC120, Leica MC170, Leica DMS300 or Leica DMS1000 products.

Requirements:

1. Leica DMS300/DMS1000 or Leica MC120/MC170– running **in HD mode**
2. 1920 x 1080 HD monitor with HDMI connector
3. PC with internet access
4. Image drawing software, eg. Microsoft Paint, Photoshop, XnView, IrfanView, PaintBox or similar software. We used Paint because it is easy and already installed on most Windows based computers.
5. PC with SD slot or a SD card reader.

Overlays In General:

- Overlays are standard jpg files (24bit RGB)
- The filenames of the overlays must be in the following format:

PN_R_OverlayName.jpg

- "**PN**": designates the position number of the overlay (numbers 01-10 can be used)
- "**R**": defines the resolution of the overlay

Table 1		
Supported Resolutions(**R**)		
Resolution (R)	**Exact Size in Pixels**	**Used For**
1	1920x1080	(Live Image)
2	1280x720	(Live Mode)
3	1824x1368	(Captured Image)
4	1216x912	(Captured Image)
5	2592x1944	(Captured Image, DMS1000 only)

- "**OverlayName**": the text name of the customized overlay

So, for example, an overlay file named: "**03_2_LeicaLogo**.jpg":

- **03** – The overlay is in the third position on the overlay menu selection.
- **2** – The overlay has a resolution of 1280x720 and is used for the "Live Mode". If you want the same over lay to be captured, you must create another overlay with the number **4** to match this overlay.
- **LeicaLogo** – Is the name of the file, which in this case, the Leica logo will be displayed on the live and/or captured image.

If you plan to use all live and captured image resolutions (1,2,3,4,5 from above table), it will be necessary to create an overlay file for each resolution. This will result in up to 50 overlay files depending on your equipment. If you want to use overlays in the Full HD Live Image mode only, you need create one file for each number position with resolution setting of "1".

All the overlay files combined must not use more than 2MByte of disk space. Delete any versions of overlays that you do not want to use from the root folder "OVERLAY".
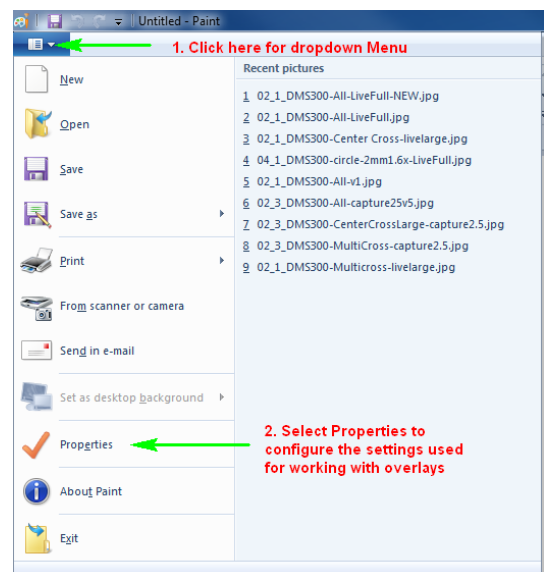
Initial Preparation:

1. Go to the Leica-Microsystems web page, then to your specific product page.
2. Click the "Download" Tab and under the **Software** heading, download the *GeneralOverlays.zip* file.
3. Unzip the file to a folder on your PC where you can save your work as you go. We will refer to this later as your "Working Overlay" folder.
4. Review the content of this folder. You should see a list of several image files that can be edited and used as an overlay template.

Edit or Create an Overlay:

1. We recommend that you use Windows Paint because it is on nearly every Window computer. However you can use other photo/image editing software if you prefer.
2. Using the File Menu in Paint, select **Properties:**

Figure 1

3. Choose "Pixels" as Units and verify the correct format size depending on the type of overlay being created (see previous section on *Overlays in General*). In this example, we are creating a live image overlay (1920x1080). Do not change the pixel size of the template, you must use the exact pixel size as it is with the template.
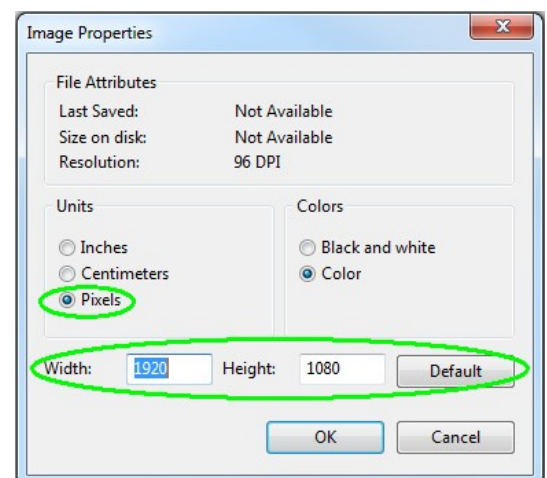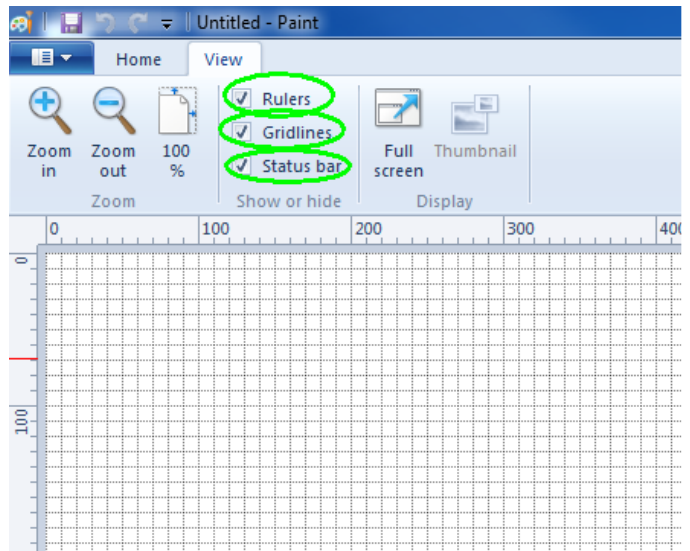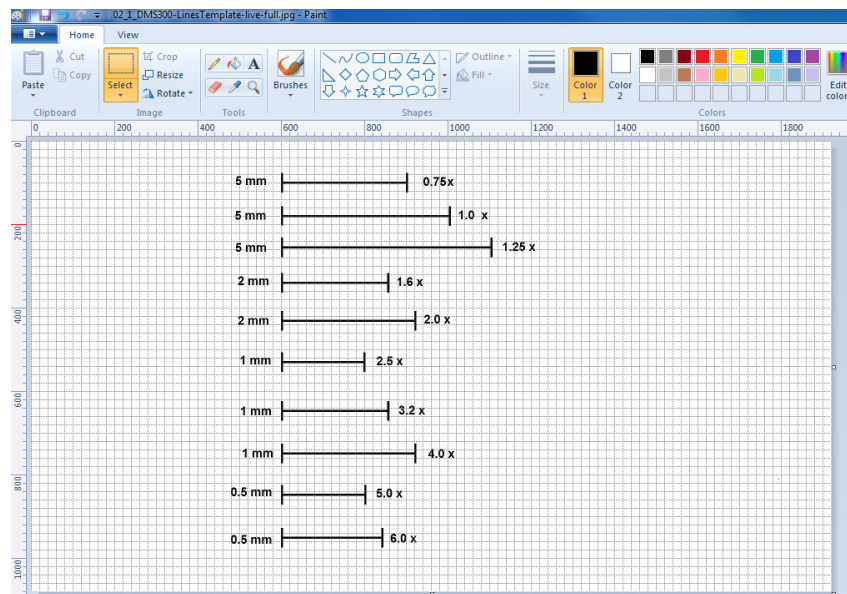
Figure 2

Figure 3

4. Using the "View" Tab, make sure that items, Rulers, Gridlines, and Status bar are checked. This will make positioning of the overlay much easier.

5. For Example: as a starting point, we will use a file named, *04_1_DMS300-LinesTemplate-liveHD.jpg* in our "Overlay working" folder. You should see something similar to the image below.

Figure 4

6. In this example, the scaled lines in this file are for each zoom setting on the Leica DMS microscope. These scaled lines are intended for the 0.8x standard objective.

Figure 5

7. Using the *"Select"* feature in Paint, choose the scale you would like to display and position it where you would like to be displayed on the live image, as show in the example below.
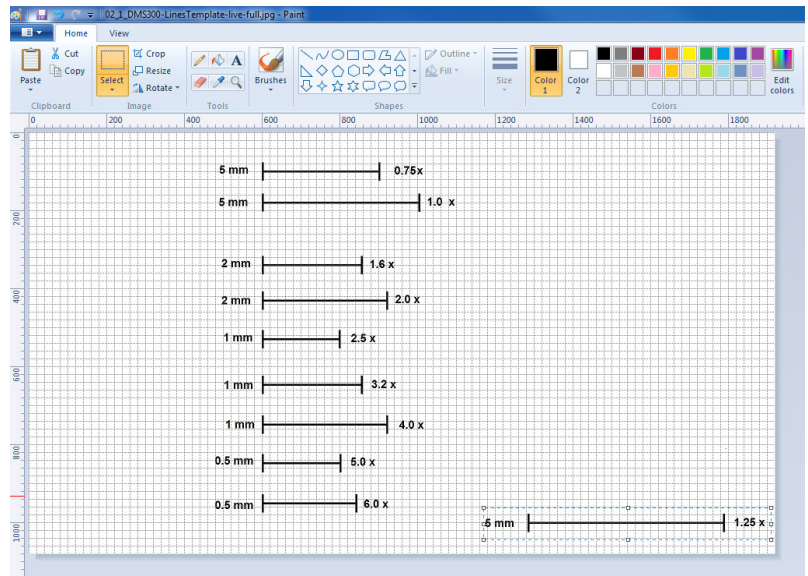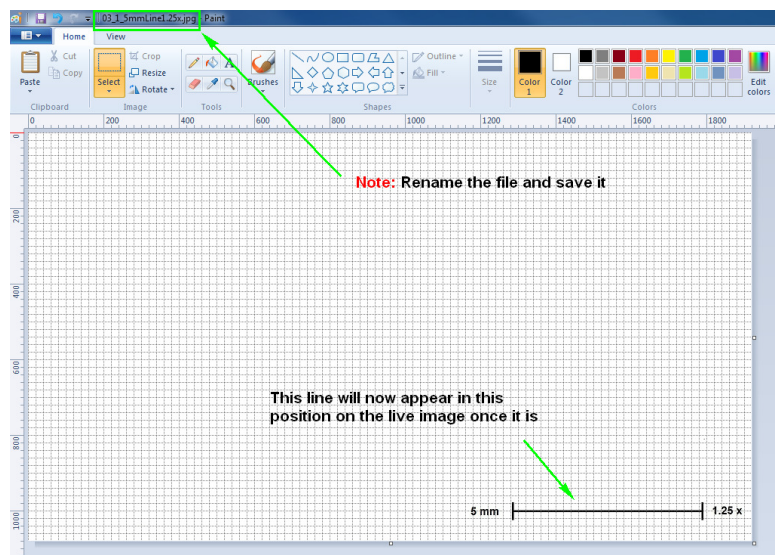

Figure 6

8. At this point, it is highly recommend that you rename the file to fit to the overlay. In this example, and using the naming format described earlier, we rename this file to: 03_01_5mmLine1.25x.jpg.

9. Now we simply delete the wanted lines from this overlay and save the file again.
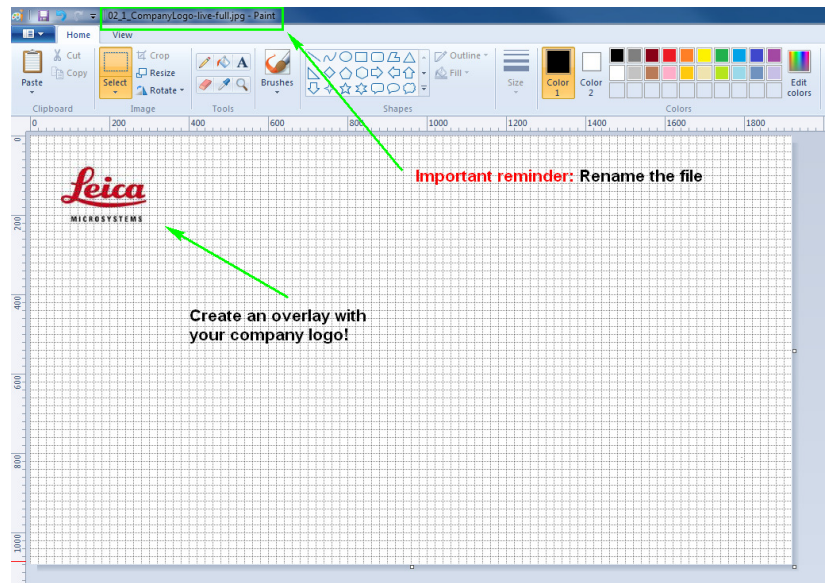

10. Congratulations! Your first overlay is complete. Now you can simply repeat steps 7-9 to create other overlays as needed. Do not forget to rename the overlay for each one. Also you can only create an overlay for positions "01" to "10". Review section "Overlays in General" if necessary for details.

IMPORTANT NOTE: When creating scale bars, please verify that each scale bar or measurement line is correct (in all live and capture image formats!) with a ruler or a stage micrometer. These are not calibrated, but are intended to be a quick reference for, standalone measurements.

Figure 7

Create an Overlay with your Company Logo: You easily create a custom logo overlay using the same process as above to create with the templates.

To create a company log, open the Leica logo template, select and remove the logo, then copy and paste your logo on the template. You can then position and size the logo accordingly.
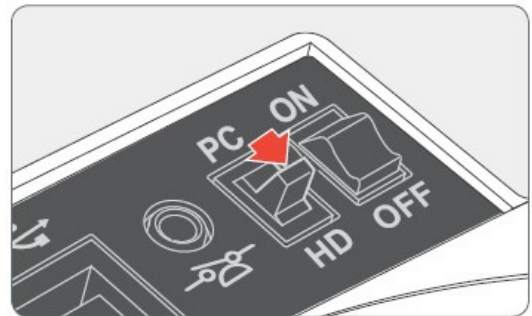
Importing Overlays:

Once you have created your overlays you need to import them to your DMS microscope or MC camera. This is quite easy to do as you need only to copy your overlay to a SD card. You need to create a folder called "OVERLAY", then copy all your newly created overlays to this folder. The following steps can be used for the DMS digital microscopes or MC cameras.
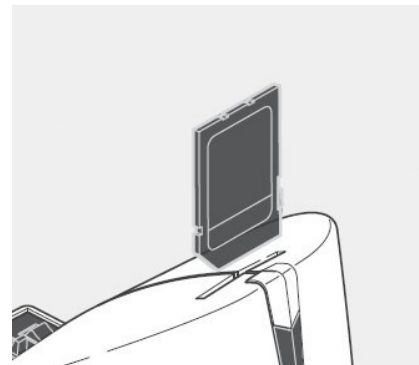
1. Make sure the Leica DMS/MC unit is in the **HD mode** and turn the unit on. *Figure 8*.
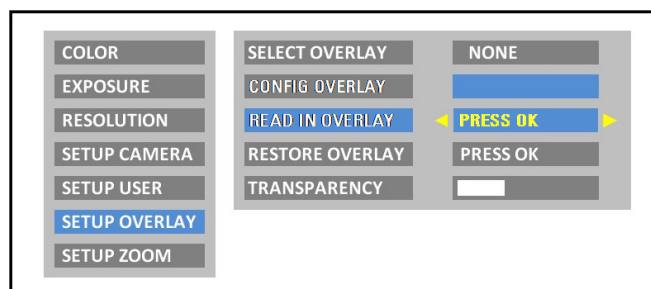
Figure 8

2. Insert the SD card to the SD Card Slot with the folder "OVERLAY" and your various overlay files. *Figure 9.*

Figure 9

Figure 10

3. Go to the SETUP OVERLAY menu (also see user manual) and select the submenu READ IN OVERLAY and press the "OK" button.
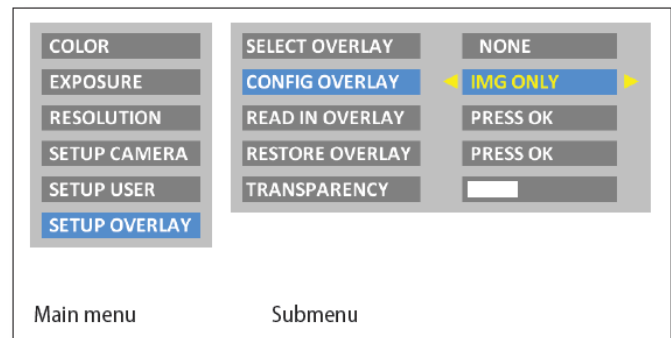

Note: Actual menu layout and apperance may change. Look for "SETUP OVERLAY" in the menu selection.

4. All the overlay files in the subfolder OVERLAY on the SD card are will be read into the unit (provided they are correctly named and in the correct format (jpg).

Figure 11

5. Select the desired overlay file via the SETUP OVERLAY menu. When in live video mode, you can also quickly switch between overlays by pressing the up or down button.

6. In order to store the overlays to the captured images, select in the sub menu CONFIG OVERLAY the option LIVE + IMG. *Figure 11*.

Note: Actual menu layout and apperance may change. Look for "CONFIG OVERLAY" in the sub-menu selection