

3DHISTECH

CaseViewer 1.4 for Mac OS

User Guide

March 4, 2015
Rev. 1

Table of Contents

1 Opening CaseViewer.....	5
2 CaseViewer.....	9
2.1 Main Display.....	9
2.2 Functions.....	9
Hotkeys.....	24

Disclaimer

Copyright © 2001-2015 3DHISTECH Ltd.
All Rights Reserved

Intellectual property related to the 3DHISTECH products are as follows:

EP 1,789,831; US 7,663,078; EP 2,024,772; JP 2009-512685; US 12/301,781; EP 1,644,767; JP 2007-516451; US7,327,515; EP 1,994,398; JP 2008-557835; US 12/281,566; U0700210; US 6,246,785; HU0900142; HU0700404; PCT/HU2007/000065; EP 08762668.5; US 12/663,537; PCT/AT2006/000492; JP 2008-542552; EP 06817469; US 12/095,545; PCT/AT2006/000493; EP 06817470.5; US 12/095,596; HU0900741; US 61/264,732; US 11/826,752; P0401870; PCT/IB2005/050344; US 11/662,976; HU0700409; US 12/042,050; US 77/636,144 and 007502032.

The above mentioned granted patents, granted utility model, registered trademarks, pending international and national patent applications and the other corresponding IP are the sole properties of the 3DHISTECH Ltd.

3DHISTECH Ltd. is not liable for damage of whatever nature (including, but not limited to, general or specific damage, indirect damage, consequential damage or incidental damage, including the results of the analysis of the digitized slides, for example, change of health status related to erroneous diagnosis from the digitized slide(s)) that stems from or is associated with use of Product, digitized slides, quality of staining, quality of stained slides, quality of used method of staining. 3DHISTECH Ltd. assumes no responsibility for the functionality and fault-free condition of your “application programs” (Workflows, VBA macros, Commander scripts).

CAUTION

For research and education uses only, not for use in diagnostic procedures. This product has not been approved or cleared as a medical device by the U.S. Food and Drug Administration, nor any other regulatory authority. The data and images obtained or viewed using this product are not intended for clinical or diagnostic use.

For performance evaluation only, the performance characteristics of this product have not been established.

Third-Party Disclaimer (LibTIFF – TIFF Library and Utilities)

3DHISTECH Ltd. is not liable for damage of whatever nature (including, but not limited to, general or specific damage, indirect damage, consequential damage or incidental damage, including damage resulting from lost profits, interruption of business, loss of business information, pecuniary loss or similar damage) that stems from or is associated with the incorporated part of this Product that is made by Silicon Graphics Inc.

THE SOFTWARE IS PROVIDED "AS IS" AND WITHOUT WARRANTY OF ANY KIND, EXPRESSED, IMPLIED OR OTHERWISE, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT SHALL SAM LEFFLER OR SILICON GRAPHICS BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES OF ANY KIND, OR FOR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER OR NOT ADVISED OF THE POSSIBILITY OF DAMAGE, AND ON ANY THEORY OF LIABILITY, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Further Information

For the latest information on 3DHISTECH products and services, please visit our website at:

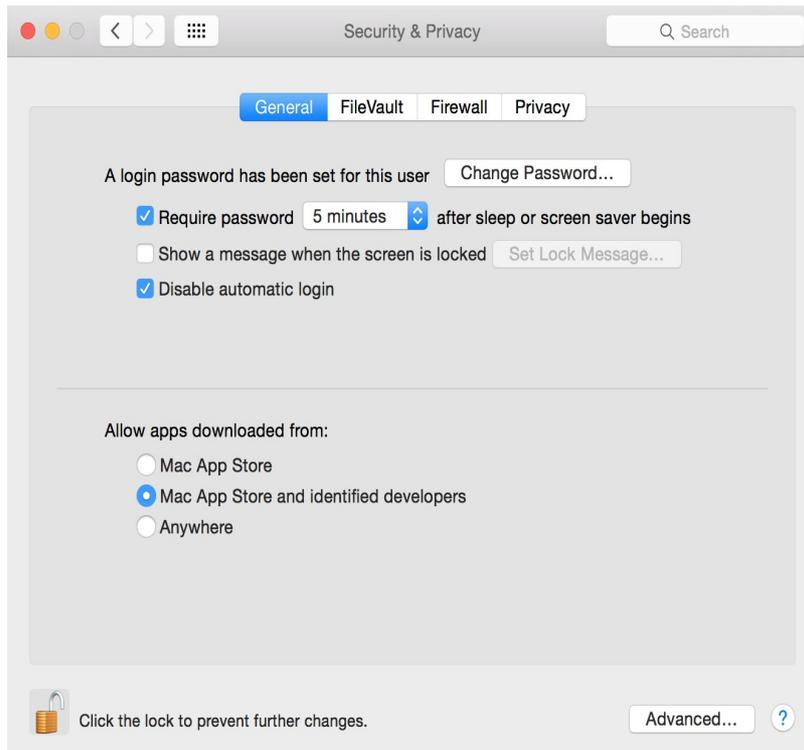
<http://www.3dhitech.com>.

29-33 Konkoly-Thege Miklós street, Building 6
Budapest
1121 – HUNGARY

1 Opening CaseViewer

NOTE: Before running CaseViewer, make sure to modify settings according to the following:

- Under the System Preferences/Security & Privacy panel within the **Allow apps downloaded from:** section activate one of the options **Mac App Store and identified developers** or **Anywhere**.

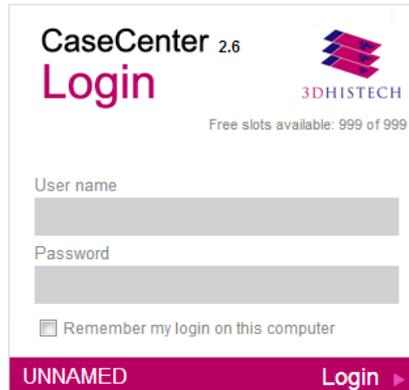


1. Click the  program shortcut icon on your desktop to display the startup window of the application.



- 2. In the startup window of CaseViewer, select the desired CaseCenter storage you want to access.

Click the thumbnail image of the CaseCenter login window to connect to the dedicated server, then the login window of the selected server is displayed.

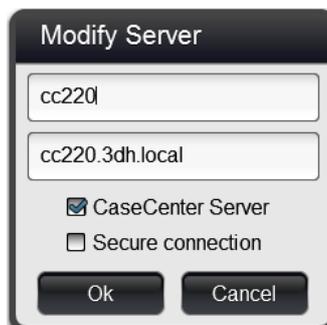


- Enter user name and password, then click **Login** to connect.
- Locate the slide on the CaseCenter server, then click its thumbnail to open in CaseViewer.
- Click  to define another CaseCenter server. Enter **Server Name** and **Server Address**, and activate **Secure connection** if you want to connect to the server through HTTPS. If **CaseCenter server** option is disabled, any website can be opened. Click **OK** when finished.

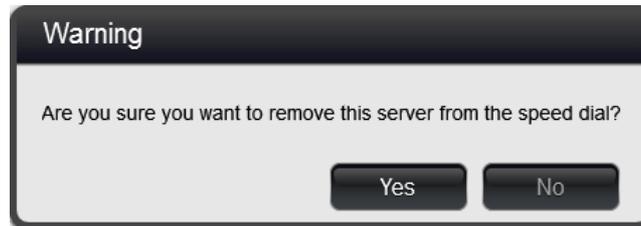


NOTE: The maximum number of definable servers is 8.

Click  to modify server name, address, and/or connection type.

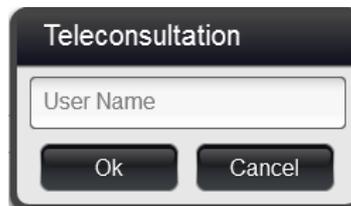


Click  at the top left corner of the server thumbnail, then click **Yes** in the message window to delete the server.



To open a slide that is included in a Teleconsultation session, and attend teleconsultation via CaseViewer, do the following:

1. Click the server thumbnail in the startup window.
2. Login to CaseCenter.
3. Go to Teleconsultation window.
4. Select the TC session you are invited to.
5. Click  to join the session.
6. Enter **User Name** in the TELECONSULTATION window (can be different than the CaseCenter user name), then click **OK**.



7. The first slide selected for the Teleconsultation session is displayed in the CaseViewer window. A button panel with additional buttons related to teleconsultation functions are displayed at the top left corner.



- If you are the host of the session, the  button is active (as seen above), otherwise you can request for slide control by clicking the  button.

NOTE: The host must approve the request, and the control can be taken back any time the host wants to.

- To quit session, click . The CaseCenter server window turns active again.

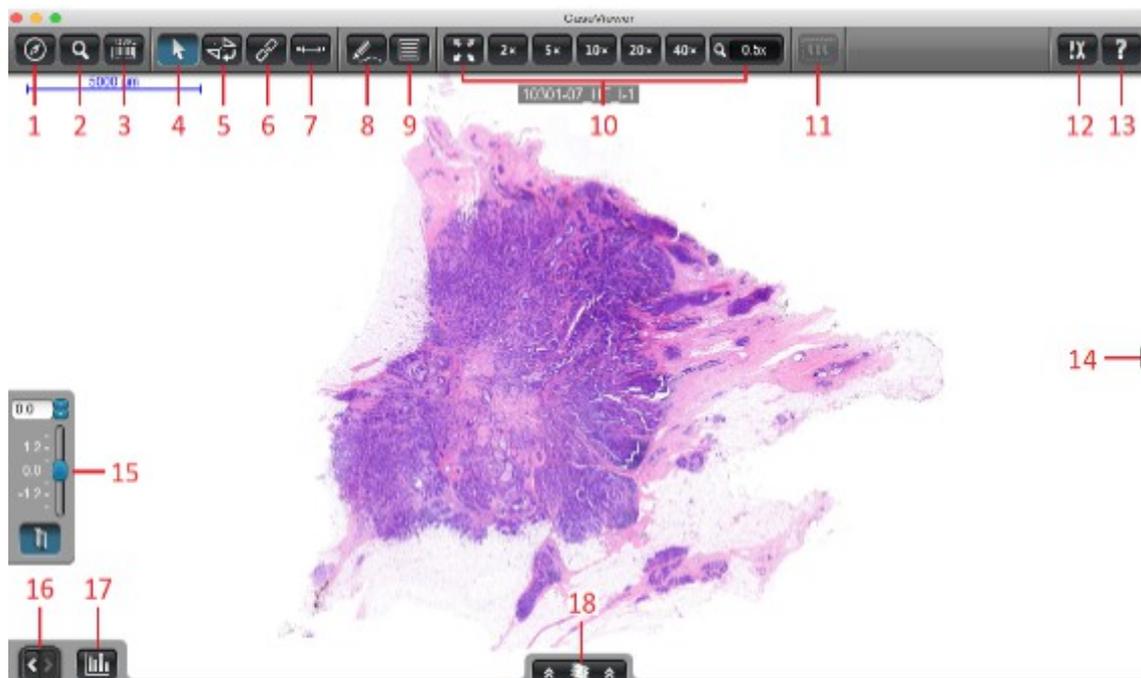
- To open a chat window, click . Type your message to the field at the bottom, then click .



2 CaseViewer

2.1 Main Display

After selecting the slide to open, it will be automatically displayed in CaseViewer.



Picture 1: CaseViewer main display

2.2 Functions

1. Slide overview

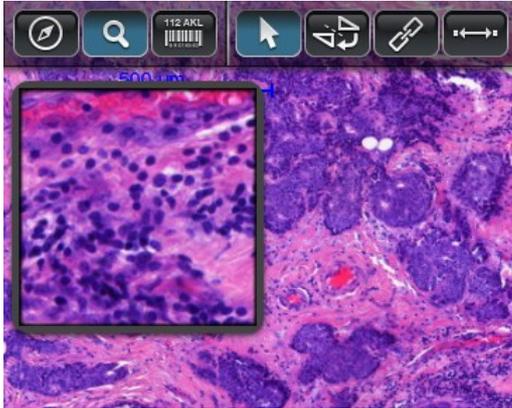
Shows a low resolution overview from the whole slide to help navigation. The screened area is marked with a rectangle with gray border. It allows fast navigation through the slide by clicking onto a certain point in the overview or panning with the rectangle.



Picture 2: Slide overview

2. Magnifier

Magnifies a certain area of the slide. The magnifier window can be dragged and dropped on the slide. The magnified area is marked with a rectangle marker next to one corner of the magnifier window. Clicking the pin button  moves the magnifier window back to the menu bar. In this case the magnifier follows the cursor pointer.



Picture 3: Magnifier



Picture 4: Detached Magnifier

With the corner shifter icon  you can change the position of the rectangle marker from one corner to another going clockwise on each click.

When the  icon is visible at the top left corner of the magnifier window, the center of the window becomes the marker area for magnification.



Picture 5: Detached Magnifier

The area of marker can be modified by scrolling with the mouse wheel, thus magnification within the magnifier window becomes adjustable. The limits of this magnification can be set in the [settings](#) options. Magnifier window size can be changed with the window re-size  icon.

3. Label area

Shows the label area of the slide. With the rotation  icon the label image can be flipped by 180°. *Slide Description* and/or *Slide Information* windows can be displayed by clicking the  icon. Label area window can be re-sized by dragging the  icon at the bottom right corner.



Picture 6: Label Area

4. Pan mode

Use this mode to navigate on the slide.

5. Flip or rotate slide



Switching to flip-or-rotate mode, the slide can be flipped either horizontally  or vertically  and also can be rotated using the slider, 0-180° either clockwise or counter-clockwise. The  (reset rotation) function rotates the slide back to its original position (as it was on the glass slide). The  (pin) function fixes the panel, and you can turn on/off both of the two flip options. If you reset the rotation the panel remains open if pinned, otherwise it will be closed.

6. Linking the slides

In parallel view mode the slides can be linked to each other, so they can be moved and magnified in a synchronized way.

7. Measure length

Create simple length measurement by defining a starting and an end point of measurement on the slide by clicking with the mouse. The length is displayed on the connecting line.



Picture 7: Measure length

8. Annotation mode

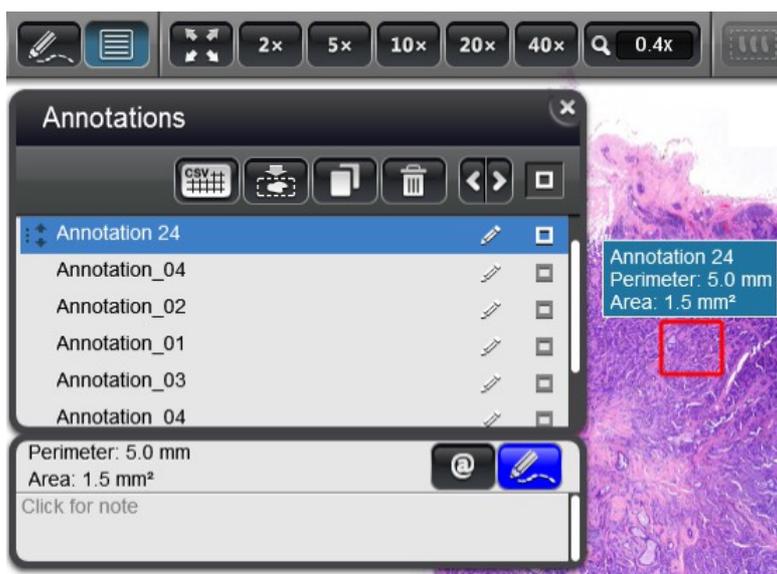


This mode allows placement of several different kind of annotations on the slide, such as:

-  The *Annotations* panel is not displayed automatically after creating an annotation, allowing you to put annotations continuously on the slide.
-  Pins the *Annotations* panel, enabling you to set or modify the annotation you created.
-  Arrow-type annotation: draws an arrow to a point of interest on the slide.
-  Free size rectangle
-  Fix size rectangle: draws a fixed size rectangle annotation on the slide. The annotation size can be set up in *settings*.
-  Free circle

-  Fix size circular: draws a fixed size circular annotation on the slide. The annotation size can be set up in **settings**.
-  Screened: annotates the area visible on the monitor.
-  20 × FOV: puts a standard 20 × field of view sized annotation on the slide. The annotation size can be modified in **settings**.
-  40 × FOV: puts a standard 40 × field of view sized annotation on the slide. The annotation size can be modified in **settings**.
-  Free hand area
-  Free hand linear
-  Measurement annotation

9. Annotation management panel

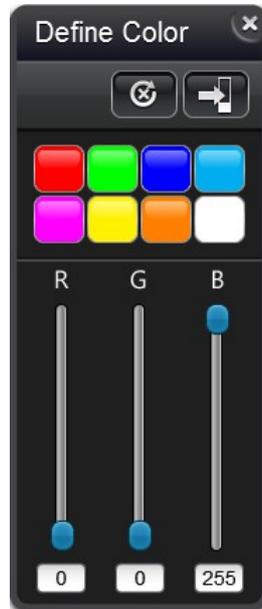


Picture 8: Annotation panel

The following functions are available on this panel:

- Move *Annotations* panel by dragging it (clicking on a neutral area).
-  *Edit annotation*: click this button to change the annotation name. To add a note, first click in the note box then enter the text.

-  *Change annotation color*: click this button to select or edit a color for the annotation from the Define Color panel.



-  If the slide is opened from CaseCenter, by clicking this button a link for the specific annotation on the slide is copied to the clipboard. When inserting this link as hyperlink in a text editor, the slide will be opened and the annotation is zoomed in after clicking the link.
- **Click for note** – Field for annotation description. Entry of multiple data and copy/cut/paste function is supported.
-  *CSV Export*: name, area, and perimeter of the selected annotation into a CSV file.
-  *Create New Virtual Slide or Tray*: If only one annotation is selected, then Virtual Slide or Virtual Tray can be created. If more annotations are selected, only Virtual Tray can be created.
-  *Copy annotation*: this function allows the duplication of the selected annotation from one slide to the other in parallel view mode.
-  *Delete annotation*: deletes the selected annotation.
-  By clicking left or right arrows the previous or the next annotation can be displayed on the center of the window.
- *View* / *Hide all annotations*
- *View* / *Hide selected annotation*

10. Zoom levels



These controls change the magnification from fit-to-screen to 40 x. The current zoom level is displayed in the far right field.

11. Virtual Tray management panel

This button is active only if a Virtual Tray is opened. Virtual slides can be managed on this panel.



The VS list shows compartment slides of a Virtual Tray. Compartments can be managed as layers – drag and drop the selected compartment to view in the front or send it to back, or click to hide them.

The opacity of the compartment also can be set with the alpha slider.

It is also available for you to delete a VS from the list, rename a VS, or make it visible or hidden.

- Move Virtual Slide by dragging it.
- Manage Virtual Slide items:



- Click the slide to select, then it can be deleted - , hidden - , or its name can be edited - if necessary. Move between slides by clicking the buttons.

-  Opens the panel containing background tools. The following functions are available:
 -  Select background color and make it transparent.
 -  Show-hide background.
 -  Reset background.
 -  Undo-Redo

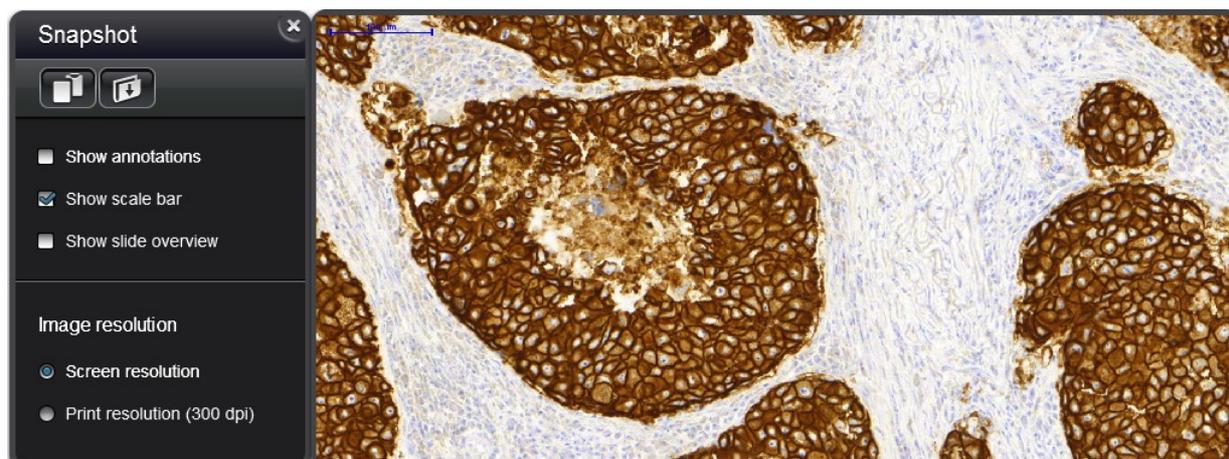
12. Settings



Operation-related settings of CaseViewer can be modified on the Settings window panels.

- Create snapshot

This mode allows the saving or copying of a screen-shot made from the current visible area.

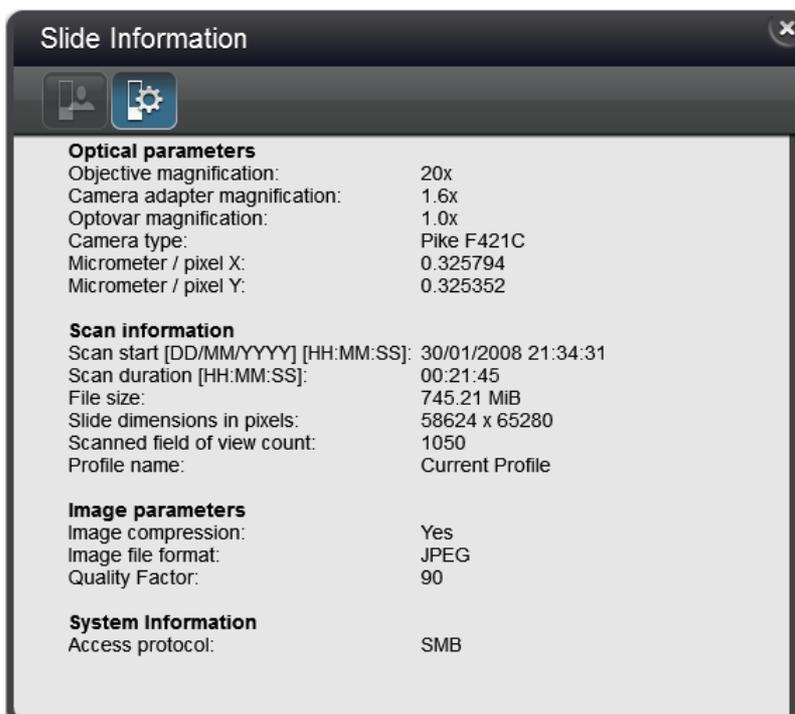
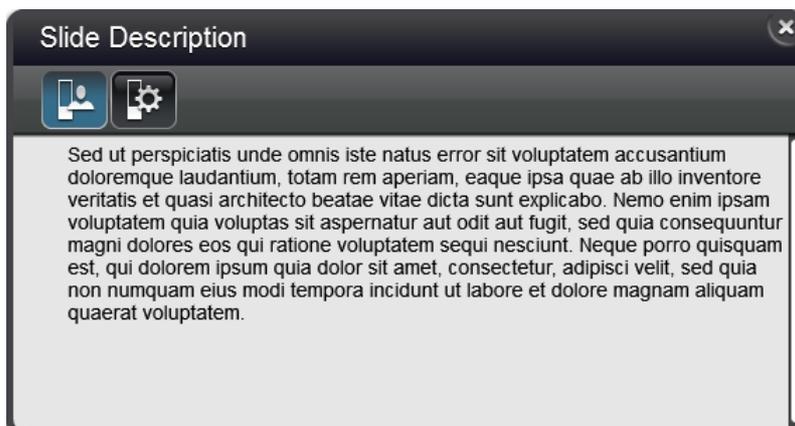


- **Show annotations** – annotated areas are highlighted on the actual slide view
- **Show scale bar** – a scale bar is displayed in the Snapshot window
- **Show slide overview** – a preview image of the slide is displayed in the Snapshot window
- **Image resolution** – select one of the following:
 - **Screen resolution** option sets image resolution identical with the applied resolution of the monitor
 - **Print resolution (300 dpi)** sets image resolution to 300 dpi

Click  to copy image to clipboard.

Click  to save image to file.

 - Slide Description / Slide Information



 - Settings

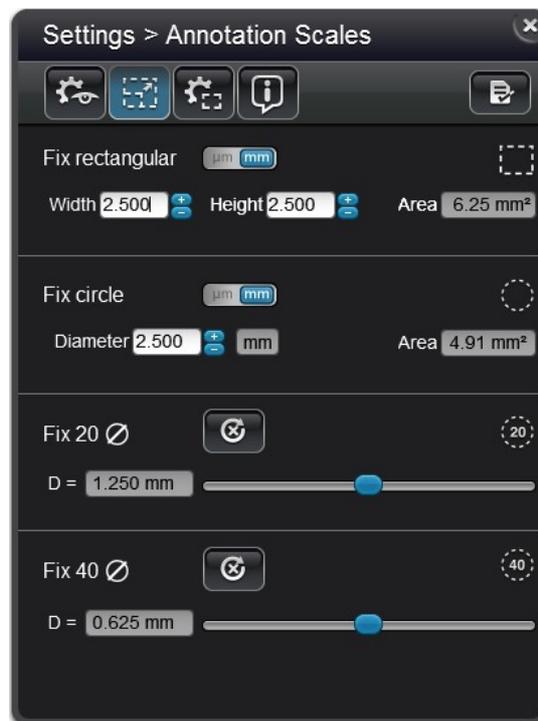
Click  when finished with the modification of settings.

-  - View panel



- *Magnifying*: sets magnifier window attributes. Select the option **Relative** to set magnifier window magnification to be dependent on the magnification of the slide. If selecting the option **Absolute**, the magnifier displays the set magnification. Click **Reset** to restore default settings.
- *Orientation of Slide Label Area*: depending on the type of scanner, image of the label area can be flipped horizontally. Activating the **Upside Down** function automatically rotates the image of the label area.

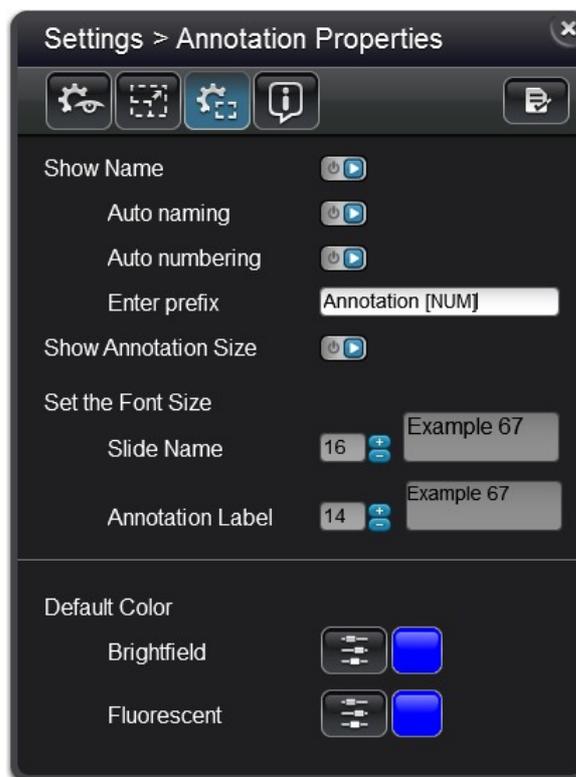
-  - Annotation Scales



The size of annotations can be set in micrometers or millimeters.

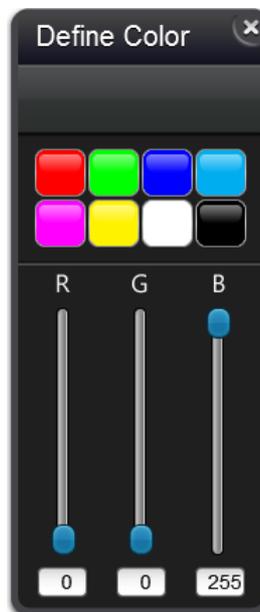
- *Fix rectangular*: Type or click arrows to set values. Area is calculated and displayed automatically.
- *Fix circle*: Type or click the arrow buttons to set diameter value of the annotation.
- *Fix 20 / Fix 40*: Smaller adjustments can be made by dragging the sliders for both 20mm and 40mm FOVs.

-  - **Annotation Properties**



- *Show Name*
 - *Auto naming*: activate this function to auto-name annotations with the set prefix text (default: Annotation).
 - *Auto numbering*: Automated numbering of annotations can be activated here.
 - *Enter prefix*: Type a template for automated annotation naming and numbering.
- *Show Annotation Size*: The size of annotations are displayed if switched on.
- *Set the Font size*: Font sizes of the following attributes can be set here:
 - *Slide Name*
 - *Annotation Label*

- *Default Color*: the default border color of the annotation and the scale bar on a brightfield or a fluorescent slide image can be defined on the *Define Color* panel. Click the color box of a predefined color to modify it.



- Information



13. User Guide

The CaseViewer User Guide in PDF format is opened upon clicking this button.

14. Screen splitter

CaseViewer allows parallel and synchronized view of two slides at the same time. The screen splitter line can be slid from the middle, so depending on the splitter position it is available for you to modify the pane area in which one of the slides can get more space on the display.

For switching to *parallel view mode* open a slide and click the splitter  icon.

The actual slide in the case will be displayed automatically on the right side of the display.

15. Z-stack panel

Pannoramic scanners are capable of acquiring Z-stack images (consisting of several layers of different focus levels). By default, the viewer displays the so-called *Extended Focus Level* (for details see the user guide of the specific scanner).

Z-stack mode is activated and displayed as  by default, otherwise click  to turn on Z-stack mode. Different Z-stack levels can be viewed by moving the slider up- or downwards by dragging or scrolling.

The desired value can be entered in the indicator field that shows the actual distance from the center focal level in micrometers.

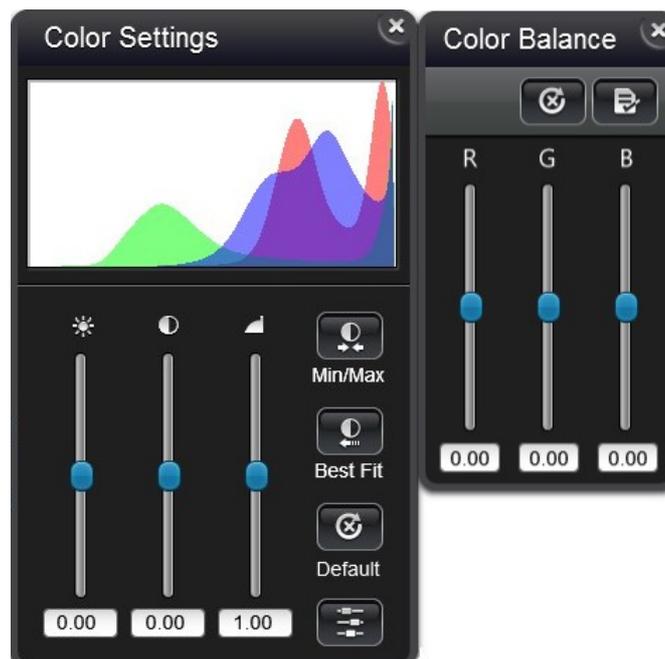
16. Go to previous / next slide

Load the next/previous slide within the case.

17. Color channel adjustments

Color adjustment might be necessary for the best visualization results for your display.

Brightfield slides



Brightness, contrast, and gamma values can be modified on the *Color Settings* panel. Changes take effect immediately. A color histogram of the slide is available in this panel to support precise adjustment.

-  - Optimal contrast values
-  - Best fit
-  - Reload default values

RGB channels can be adjusted individually on the *Color Balance* panel after clicking .

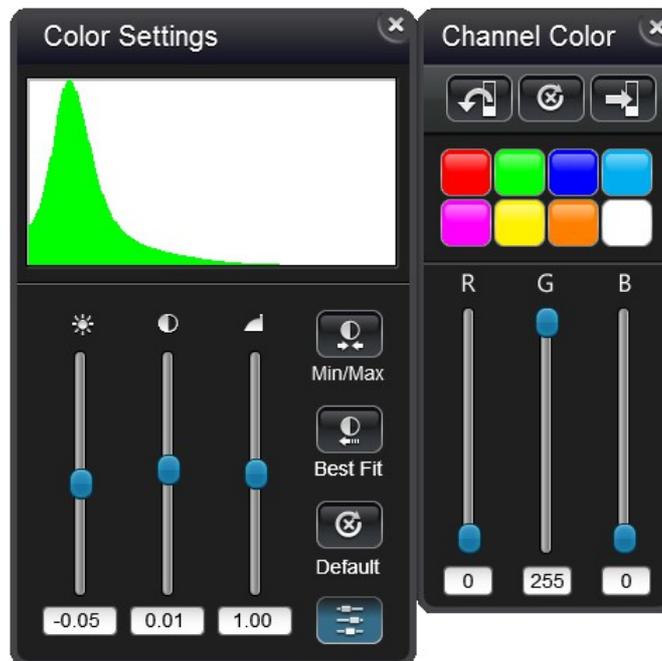
-  - Reset values
-  - Save

Fluorescent slides: Fluorescent slides contain individual channels for each fluorescent signal. This panel represents the available fluorescent channels of the slide. Click a label to turn a channel on or off.



All channels can be displayed in grayscale mode upon clicking . If grayscale mode is activated, only one selected channel is visible at a time.

Color adjustment of a fluorescent slide is available channel by channel. Right click an active channel to modify brightness, contrast, and gamma values on the *Color Settings* panel.



 - Optimal contrast values

 - Best fit

 - Reload default values

Fluorescent channels can be adjusted individually on the *Channel Color* panel after clicking



-  - Load default values from the slide
-  - Save to slide
-  - Reset values

18. Switch to CaseCenter

You can turn back to the CaseCenter user interface to manage your slides, move to the next case, or to start a teleconsultation.

Hotkeys

The following list contains keyboard shortcuts you can use in CaseViewer to activate functions.

Main functions

Help		F1
CaseCenter / Local file system view		F2
Slide view		F3
Open local slide / CaseCenter-connection	CTRL	O
Settings	CTRL	E

View

Show / Hide magnifier		M
Show / Hide label area		L
Show / Hide navigator		N
Switch on / off parallel view		/
Switch between slide windows	CTRL	TAB
Zoom to fit		0
2x		1
5x		2
10x		3
20x		4
40x		5
Z-stack on / off	CTRL	Z
Shift to overlay Z layer	CTRL	+
Shift to lower Z layer	CTRL	-

Slide operations

Slide information	CTRL	I
Previous slide		Backspace
Next slide		Space
Reset rotation	SHIFT	Q
Rotate CV 1°	CTRL	R
Rotate CV 10°	CTRL + SHIFT	R
Rotate CCV 1°	CTRL	L
Rotate CCV 10°	CTRL + SHIFT	L
Rotate & zoom	CTRL + Mouse	
Flip slide	CTRL	H / U
Join / Release slides	CTRL	J

Colors

Show Brightfield Color Manager		C
<i>Show Fluorescent Color Manager</i>		
- for the first channel	SHIFT	C
- for the previous channel		O
- for the next channel		P

Annotations and Virtual Slides

Annotation mode (last used tool)		A
Previous annotation		Q
Next annotation		W
Create snapshot	CTRL	P
Create new Virtual Slide from the annotation	CTRL + SHIFT	N
Next virtual object in a Virtual Slide		K
Previous virtual object in a Virtual Slide		J

Pop-up message box

Switch between buttons		TAB
Accept active button		ENTER
Close message box (Cancel)		ESC
