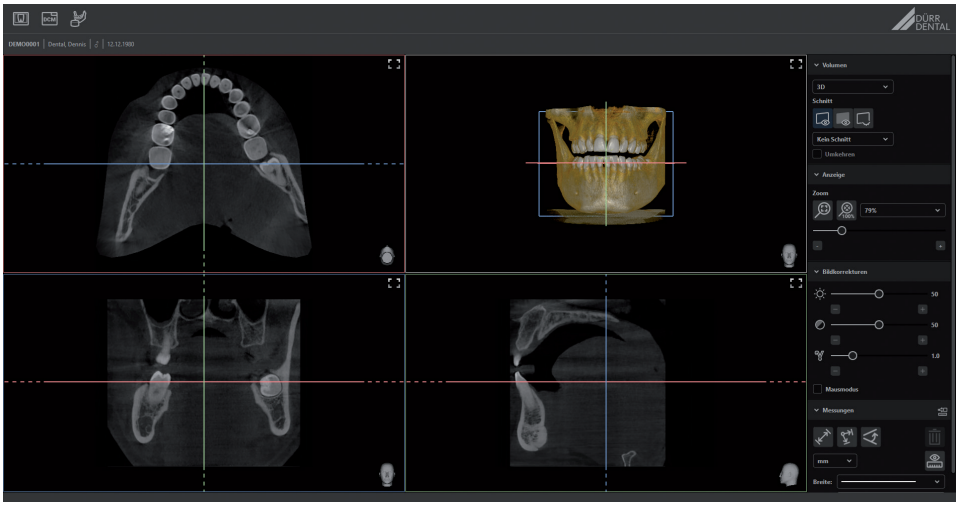
VistaSoft View



EN Operating instructions

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Important information

1 Warnings and symbols

The warnings in this document are intended to draw your attention to possible injury to persons or damage to machinery.
The following warning symbols are used:


General warning symbol

The warnings are structured as follows:


SIGNAL WORD

Description of the type and source of danger

Here you will find the possible consequences of ignoring the warning

› Follow these measures to avoid the danger.

The signal word differentiates between four levels of danger:

– **DANGER**
  Immediate danger of severe injury or death
– **WARNING**
  Possible danger of severe injury or death
– **CAUTION**
  Risk of minor injuries
– **NOTICE**
  Risk of extensive material/property damage

These symbols are used in the document and on or in the unit:


Note, e.g. specific instructions regarding efficient and cost-effective use of the unit.


Refer to the accompanying electronic documents.


Manufacturer


Note, e.g. specific instructions regarding efficient and cost-effective use of the unit.

Action instructions are identified specifically in this document:
› Perform this action.

2 Product description

VistaSoft View is a module of the imaging software VistaSoft.


For further information please refer to the VistaSoft manual, order number 2110100001

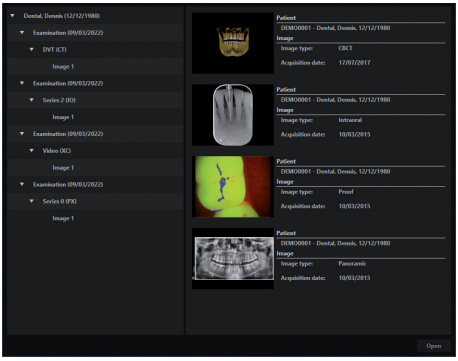
VistaSoft View can only be used to view exported X-ray and video images (e.g on a patient medium). The opened images can be changed (but not saved) with a dedicated basis function. You can use VistaSoft View to open all images exported from VistaSoft. Depending on the format opened, not all processing tools are available.

Usage

3 Starting the software

3.1 Opening VistaSoft View with an image

› Open the export directory.
› Start the file *VistaSoft Viewer starten.bat*. VistaSoft View is started and the available image is opened.
› If multiple images are available, a selection window will pop up.



› Select an image and click *Open*.

3.2 Opening VistaSoft View without an image

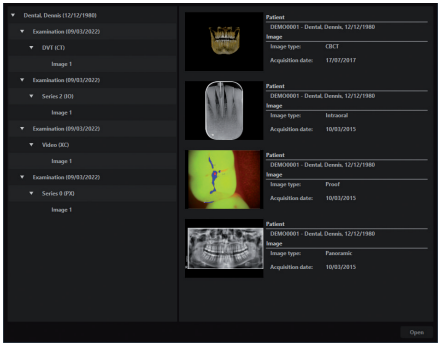
› Open the export directory.
› Open the *VIEWER* directory.
› Run the file *VistaSoftView.exe*. VistaSoft View is opened without an image.

4 Open image

4.1 Open the DICOMDIR directory

A DICOMDIR directory contains information about the patient (e.g. patient name) and the images taken (e.g. record data). This are displayed when the DICOMDIR directory is opened.

› Click DCM.
› Mark the DICOMDIR directory.
› Click *Open*. The DICOMDIR directory is opened and a selection window is displayed.



› Open the desired image.
› Click *Open*. The image is displayed in VistaSoft View. If available, the patient name and date of birth is displayed above the open image.

4.2 Open an individual image

If the exported images were exported as a file and not as a DICOMDIR directory, these can be opened individually.

› Click W.
› Working in the export directory, select the desired view.
› Click *Open*.

4.3 Open CBCT series

If the exported images were exported as a CBCT series and not as a DICOMDIR directory, then the series can be opened.

› Click .
› Working in the export directory, select the required directory.
› Click *Open*.

5 Navigating

The following navigation aids can generally be used:
– Mouse wheel: zoom in/zoom out image section
– Right mouse button: move image section

5.1 Navigating in CBCT images (3D)

In digital volume tomography (CBCT), three-dimensional volume data is reconstructed from a large number of individual two-dimensional X-ray images (layer images). The multiplanar reconstruction (MPR) is available to view in VistaSoft View.
With the multiplanar reconstruction (MPR) view, any two-dimensional layer and slice images can be displayed.

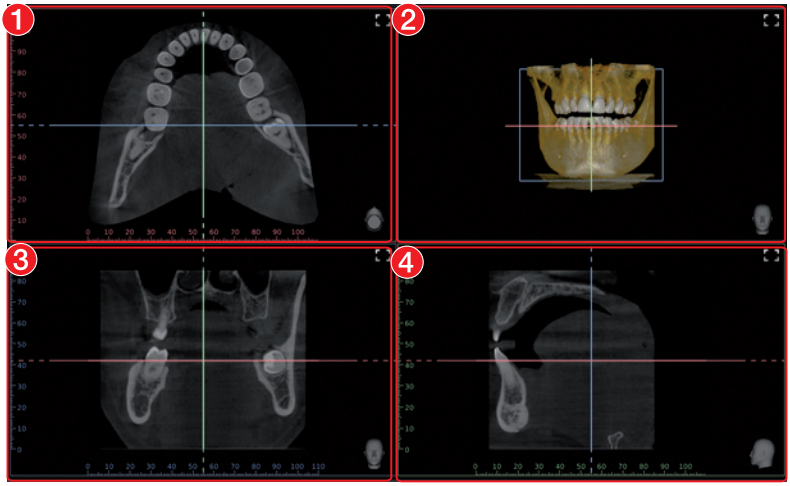


Fig. 1: MPR view

1 Axial MPR slice (view from the top/bottom)
2 Volume view
3 Coronal MPR slice (view from the front/rear)
4 Sagittal MPR slice (view from left/right)

Various functions can be used to navigate through the slice planes/layers in the CBCT images. With the aid of these functions the slice planes can be moved or rotated in such a way that the important regions can be made visible for the examination.
In the illustration below all of the navigation functions have been made visible.

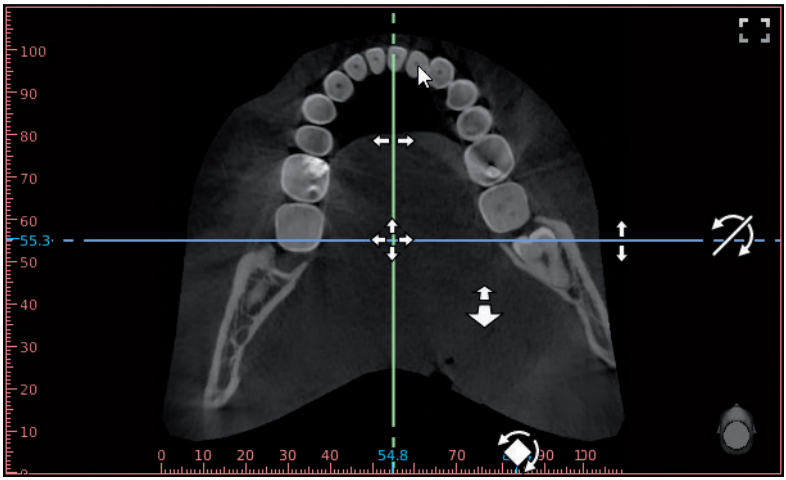


Fig. 2: Example image showing all of the navigation functions

	Jump to this point	Double-click in any view (except the volume view) to jump to this point in the volume. The slice planes in all views are moved accordingly.
	Move individual slice plane	Press and hold the left mouse button on a slice plane to drag it horizontally/vertically.
	Move two slice planes together	Press and hold the left mouse button on the intersection between two slice planes to move them together at the same time.
	Rotate slice plane	Press and hold the left mouse button on the dotted edge of a slice plane to rotate it.
	Tilt slice plane	Press and hold the left mouse button in the edge region of the view to tilt the view.
	Scroll layers	Press and hold the left mouse button in a free area in the view to scroll through the layers.

An orientation button is displayed at the bottom right of each view showing the current viewing angle onto the patient.
The view can be changed in the volume view. The slice planes are displayed in the volume view, but they cannot be changed here.

	Move image section	Press and hold the right mouse button to move the image section upwards/downwards or to the left/right.
	Rotate view	Press and hold the left mouse button to rotate the view.
Zoom image section in/out		Rotate the mouse wheel to increase or reduce the image section. The zoom tools of the toolbox (*Display*) are not active in the volume view.

The orientation head always displays the current viewing angle onto the patient. In the volume view the viewing angle can be selected directly via the orientation head:

	Orientation head front	Move the mouse cursor onto the orientation head. The views onto the orientation head are displayed and can be clicked on to select them.
	Orientation head rear	
	Orientation head left	
	Orientation head right	
	Orientation head top	
	Orientation head bottom	

6 Image editing

6.1 Display

These tools allow you to alter the image view. The zoom tools change the size that the image is displayed on the light table. The settings are not saved.
The settings for rotating and inverting an image are not saved.
With CBCT images (3D) the zoom tools can only be used on the MPR slices (axial, sagittal and coronal). The tools for image rotation and mirroring are not available for CBCT images (for information on how to rotate a slice, see "5 Navigating").

Zoom


This matches the size of the image to the size of the window.

This magnifies the image so that one screen pixel equals one image pixel.

The current zoom factor is displayed. A defined zoom factor can be selected.


The zoom can be adjusted to any required setting via the slider. You can also use the mouse wheel to adjust the zoom.

Rotate image


Rotate the image anti-clockwise by 90°.


Rotate the image clockwise by 90°.

Mirroring


Horizontally invert the image


Vertically invert the image

6.2 Image corrections

The image brightness, contrast and gamma can be corrected. As you adjust the sliders, you can see the changes directly in the image itself.


Adjust the image brightness


Adjust the image contrast


Adjust the image gamma value
< 1: Bright areas become darker
> 1: Dark areas become brighter

Mouse pointer icon


Brightness and contrast can also be changed directly in the image using the left mouse button. For this purpose, go to *Toolbox* > *Image corrections* and enable the option *Mouse mode* .
When the left mouse button is held down, making horizontal motions over the image changes the brightness, while vertical motions adjust the contrast. The sliders in the toolbox move along accordingly.
This option can be enabled separately for 2D X-ray/video images and for 3D X-ray images. It is preset for 2D X-ray/video images.

6.3 Measurements

In order to estimate lengths and angles in 2D X-ray images, the image needs to be calibrated with the aid of a reference image object. Despite calibration, this estimation does not show the accuracy of a measurement and must not be used as a measured result. The accuracy depends greatly on the projection distortion of the object on the image detector area.

In video images, lengths and angles cannot be estimated to scale. Panoramic X-ray images are not suitable for measuring due to their projection technique.

On CBCT images (3D) the calibration is calculated geometrically. Measurements are only possible in the slices (axial, sagittal, coronal and TSA), but not in the volume view or panoramic view. The length and angle values in displayed layers (MPR) are calculated on the basis of the voxel dimensions defined in the 3D image data set (measuring unit e.g. mm). The accuracy with regard to the anatomical relationships is dependent on these voxel dimensions. The values calculated in the software therefore only reflect the relationships of the voxel data in defined accuracy. The display accuracy corresponds to 50% of the last decimal place (e.g. if the resolution is 0.1 mm the accuracy is 0.05 mm).

The following measurements can be performed:

	Simple line (start and end point)
	Polyline (start, intermediate point and end point)
	Angle (between two straight lines)

The image needs to be calibrated for the measurements.

	Calibration Calibrate the image using this length for the selected line

Rulers can be displayed on calibrated images. Rulers are not available for uncalibrated images or for the measurement unit 'pixels' (px).

	Show rulers
	Hide rulers

Perform calibration with a reference object:

WARNING

Incorrect measurement result due to projection distortion or incorrect calibration

- Perform calibration with a reference object.
- Keep the projection distortion as low as possible during the X-ray acquisition.
- Do not use a panoramic image for the measurement.

- Click .
- In the image, click on the start point with the left mouse button.
- Click with the left mouse button on the end point.
- Under *Tools* and *Calibration* enter the actual length of the measured length (e.g. the diameter of a steel sphere).
- Click .
  The values are copied to the image.

Measuring a simple line:

- Click .
- In the image, click on the start point with the left mouse button.
- Click with the left mouse button on the end point.
  The measured result is displayed directly on the measurement line.

Measuring a polyline:

- Click .
- In the image, click on the start point with the left mouse button.
- Use the left mouse button to add as many intermediate points as you want.
- Click with the right mouse button on the end point.
  The measured result for the overall distance is displayed directly on the measurement line.

Measuring an angle:

- Click .

› In the image, click on the start point of the first straight line with the left mouse button.
› Click with the left mouse button on the end point of the first straight line.
› Click on the start point of the second straight line with the left mouse button.
› Click with the left mouse button on the end point of the second straight line.
The angle between the two straight lines is displayed.

Editing a measurement:

› In the image, click on the measurement with the left mouse button.
This activates the measurement and the anchor points are displayed.
› To move the anchor point, click on the anchor point with the left mouse button, hold the mouse button and move it.

Change the display of the measurement:

› Click the measurement to activate it.
› Change the colour or line width.

Delete measurement:

› Click the measurement to activate it.
› Click .

6.4 Edge mask

X-ray images can be masked at the edges to prevent the occurrence of effects that may hinder diagnosis. The area beyond the edge mask is hidden.
The edge mask can be activated or deactivated. The edge mask is automatically activated for intraoral X-ray images.

6.5 Image information

If available in the image date, the following image information is displayed for an image:
– X-ray parameters
– Findings
  – Indication
  – Findings
  – Comment

Unable to edit image information.

Hersteller / Manufacturer:

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