DBSWIN 5.17
Dental Imaging Software

Installation and Operating Instructions

AIR TECHNIQUES equipped for life®

Rx Only

CE 0297

Contents

1. General 4
1.1 Symbols used 4
1.2 Classification 4
1.3 Indications for use 4
1.4 Intended use 5
1.5 Improper use 5
1.6 Side effects 5
1.7 Specialist personnel 5
1.8 Registration 5
1.9 Storage of the data storage device . . 6
1.10 Safety 6
1.11 Notification requirement of serious incidents 6
1.12 Data backup before installation 6
1.13 Effect on the computer 6
1.14 Protection from threats from the Internet 6
1.15 Copyright and property rights information 7
1.16 Operation 7
1.17 DBSWIN main menu information . . . 8
1.18 System requirements 11

2. Data backup 13
2.1 Data backup with the Server Manager (see also section 10. - Server Manager) 13

3. Configuration 15
3.1 Central activation of the software . . 15
3.2 Configuration of the modules 18
3.3 DBSWIN module (main module) . . . 29
3.4 Patient modules (Patient Index) 32
3.5 Video module 33
3.6 X-ray module 35
3.7 Viewer module (light table) 39
3.8 ProVecta X-ray module 41
3.9 TWAIN module 42
3.10 ScanX module 43
3.11 SensorX module 45
3.12 ScanX Net module 45

4. Patient Tab 46
4.1 General 46
4.2 Functions 46

5. Light table 54
5.1 General 54
5.2 Global image search 54
5.3 Functions 55

6. Video 70
6.1 General 70
6.2 Functions 70

7. X-rays 74
7.1 Functions – Single images using ScanX and SensorX 75
7.2 Functions – Single images using ProVecta 83
7.3 Functions – Serial images using ScanX and SensorX 88
7.4 Analysis of X-ray images 91
7.5 What to do after a PC crash 94
7.6 X-Ray report (X-ray menu) 95

8. Image processing 97
8.1 General 97
8.2 Toolbox 97
8.3 Overview of functions 98

9. Printing 115
9.1 Setting up a printer 115

10. Server Manager 118
10.1 General functions and use 118
10.2 Launching the Server Manager . . 118
10.3 Language Settings 118
10.4 DBSWIN Service 119
10.5 Data inventory (DBSDATA) 127
10.6 Moving the data inventory 128

11. Display Monitor Test 129
11.1 General 129
11.2 Monitor Configuration 129
11.3 Monitor Test 130

1. General

This is the manual for DBSWIN order number: E7200A

1.1 Symbols used

Warning

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

Note, e.g. specific instructions regarding the efficient use of the unit.

Comply with the Operating Instructions.

CE labelling with the number of the notified body

Manufacturer

Medical device

Caution: Federal law restricts this device to sale by or on the order of a Doctor.

Take note of the accompanying electronic documents

1.2 Classification

Medical device of class	IIb
FDA Classification (CFR Title 21)	II

1.3 Indications for use

DBSWIN and VistaEasy imaging software are intended for use by qualified dental professionals for windows based diagnostics. The software is a diagnostic aide for licensed radiologists, dentists and clinicians, who perform the actual diagnosis based on their training, qualification, and clinical experience. DBSWIN and VistaEasy are clinical software applications that receive images and data from various imaging sources (i.e., radiography devices and digital video capture devices) that are manufactured and distributed by Duerr Dental and Air Techniques. It is intended to acquire, display, edit (i.e., resize, adjust contrast, etc.) and distribute images using standard PC hardware. In addition, DBSWIN enables the acquisition of still images from 3rd

party TWAIN compliant imaging devices (e.g., generic image devices such as scanners) and the storage and printing of clinical exam data, while VistaEasy distributes the acquired images to 3rd party TWAIN compliant PACS systems for storage and printing.

DBSWIN and VistaEasy software are not intended for mammography use.

1.4 Intended use

DBSWIN and VistaEasy imaging software is an image management system that allows dentists to acquire, display, edit, view, store, print, and distribute medical images. DBSWIN and VistaEasy software runs on user provided PC-compatible computers and utilize previously cleared digital image capture devices for image acquisition. VistaEasy is included as part of DBSWIN. It provides additional interfaces for Third Party Software. VistaEasy can also be used by itself, as a defeatured version of DBSWIN.

1.5 Improper use

This software must not be used for the following:

- Performance of measurements on images that are not suitable for this purpose due to the way in which the images were created. The software does not provide a measuring function due to the unavoidable geometric image properties of X-ray images. Here displayed values are only intended to serve as guide values. This also applies after use of the calibration function.
- Use for contraindicated purposes for the image-generating system. The operating instructions of the image-generating system must be followed here.
- Not intended for mammography use

Any other usage or usage beyond this scope is deemed to be improper. The manufacturer accepts no liability for damages resulting from this. In these cases the user/operator will bear the sole risk.

1.6 Side effects

At present, no side effects that might permanently impede the function of other programs are known.

1.7 Specialist personnel

Persons using the software must be able to guarantee safe and correct operation based on their training and experience.

- Make sure every operator is trained in the use of the software.
- All installation, resetting, alteration, extension and repair work must be carried out either by Air Techniques personnel or by a suitably qualified person approved by Air Techniques.

1.8 Registration

As the registered user of the DBSWIN program, you are entitled to use the full program function and a wide range of technical support services. You have to activate the registration in the DBSWIN program, check the desired configuration or print out the registration form. Please send in the completed registration form to Air Techniques either by fax, by post or by e-mail.

Air Techniques, Inc.
1295 Walt Whitman Road
Melville, New York 11747, U.S.A
E-Mail: registry@airtechniques.com
Fax: 1.888.247.8481

Air Techniques will send you a valid activation code for your system. The software is not copy-proof. However, only one copy may be produced for backup purposes. Any duplication or publication of the software or the software documentation is prohibited without the prior approval of Air Techniques.

1.9 Storage of the data storage device

According to the manufacturer's instructions, protect from
- Direct magnetic radiation (permanent magnet or electromagnet)
- Temperature outside the permitted range
- Humidity outside the permitted range
- Damage (scratches, breakage, deformation, etc.)

1.10 Safety

Dürr Dental has developed the software in such a way that dangers are effectively ruled out if the software is used in accordance with its intended use.
Despite this, the following residual risks can remain:
- Personal injury due to incorrect use/misuse
- Personal injury due to malfunction

1.11 Notification requirement of serious incidents

The operator/patient is required to report any serious incident that occurs in connection with the device to the manufacturer and to the competent authority of the Member State in which the operator and/or patient is established/resident.

1.12 Data backup before installation

We recommend you carry out a complete backup of the software already installed on the computer before installation of the software. When using the X-ray module (e. g. with ScanX), a regular backup of the DBSWIN database directory is essential! Instructions on how to proceed can be found in the More Information chapter (Data Backup section).

1.13 Effect on the computer

We do not assume liability for any effect on any software already installed on the computer.

1.14 Protection from threats from the Internet

The software runs on a computer that can be connected to the Internet. Therefore, the system needs to be protected from threats from the Internet.
- Use antivirus software and update it regularly.
- Look for evidence of possible virus infection and, if applicable, check with the antivirus software and remove the virus.
- Update the computers operating system regularly.
- Perform regular data backups.
- Provide access to computers to authorised operators only, e.g. by means of user name and password.

- Make sure that only trustworthy content is downloaded. Only install software and firmware updates that have been authenticated by the manufacturer.

1.15 Copyright and property rights information

All circuits, processes, names, software programs and units quoted are protected under industrial property rights of Dürr Dental. The reprinting of these installation and operating instructions or parts thereof is prohibited without the express written permission of Air Techniques.

1.16 Operation

General

The operation commands of the program follows the Windows general conventions listed below. Special operation procedures are described on the corresponding page of this operating manual.

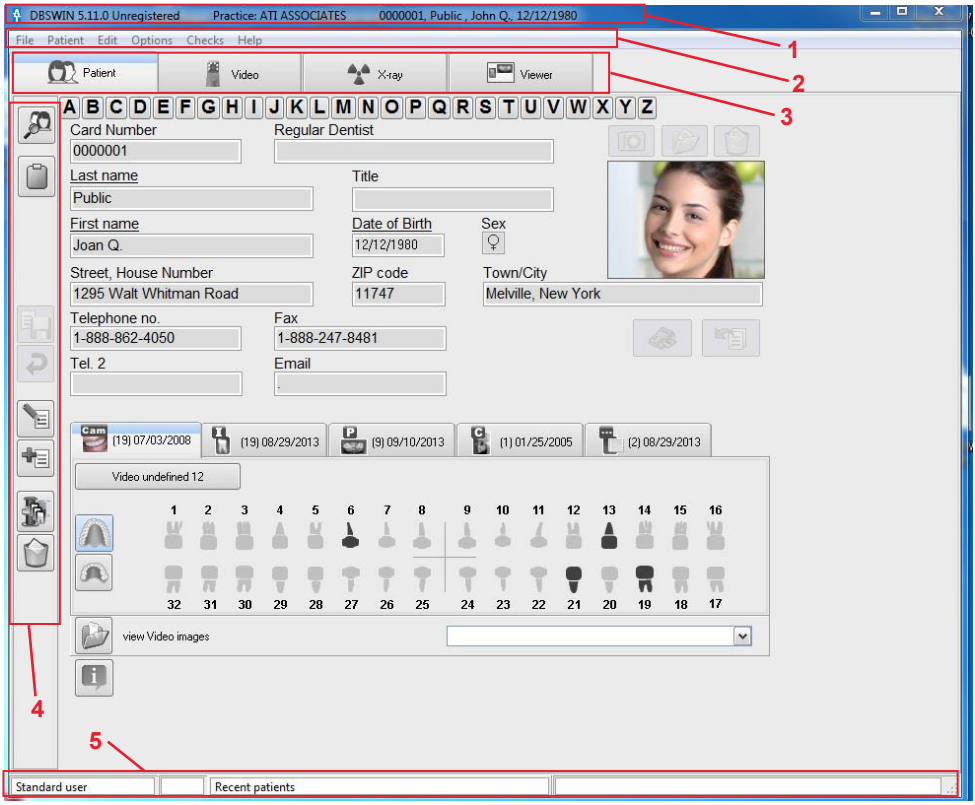
Mouse

Click:	Click left mouse key once and release it
Double click:	Click left mouse key twice
Click right hand mouse:	Click right mouse key once and release it
Drag&Drop (drag left):	Position mouse cursor on the object, click the left mouse key and hold it while moving the mouse. Release the mouse key when the desired position is reached.
Take&Drag&Drop:	Click on object, move object by means of the mouse and release the object by clicking again.
The following description relates to Windows standard setting (right-hand mouse)	
Click:	Activate or initiate a button. Select a menu item or a function
Double click on the object:	Activate object or image-related functions (e. g. image processing).
Click right hand mouse:	Load the context menu.
Drag&Drop:	Move or copy objects between Drag&Drop-capable objects or applications.
Take&Drag&Drop:	Draw graphic objects with start and end points. Brightness/contrast settings

Keyboard

The keyboard can be used to select from menus of DBSWIN or to make entries.

1.17 DBSWIN main menu information



1. Header bar
2. Menus
3. Modules
4. Function bar
5. Status bar

The office name and the currently selected patient are displayed in the menu toolbar.

The logged-in user and the last registered patient are shown in the status bar.

Error log

While the program is running, any errors that occur are automatically logged by the Logserver, which is activated each time the program starts and which automatically saves them in a file at the end of the session. These files (LOGx.rtf) are located in the C:\ProgramData\Air Techniques\log directory and can be referred to in the case of any program problems.

The Logserver can be found in the Windows task bar at bottom right.

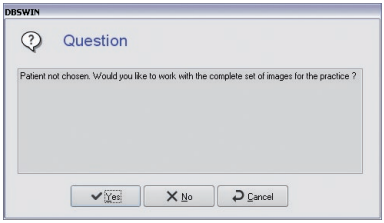
The Logserver can be viewed by double clicking to show any error messages. By right clicking on the Logserver symbol in the task bar you can exit the Logserver by selecting "Quit".

NOTICE

Please do not exit the Logserver while DBSWIN is running!

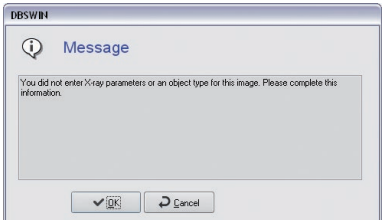
Dialog window

Question



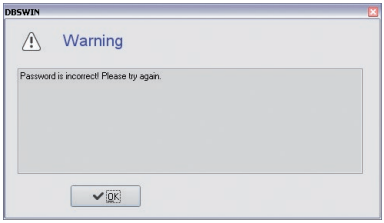
A question window appears as a safety feature that allows you to confirm, deny or cancel an action.

Message



Messages give information relevant to an instruction that has been carried out.

Warning



A warning appears when an instruction could not be carried out or could only partly be carried out.

General menus/Functions

Quit (File menu)
Returns to the login status to change user information or to end the program.

Study
This menu lets you open examinations, swap between examinations, and create new examinations for a patient. This option must be activated in the configuration/modules on the User Interface tab of the DBSWIN module so that the menu appears in the main window.
This function is mostly used in conjunction with DICOM (see DBSWIN DICOM Manual, No. E7204). If necessary, you must order and release DICOM via the central release.

Configuration (Options menu)
The display of the configuration information can be activated or deactivated.

X-ray report (Options menu)
The X-ray checks can be viewed and printed.

Contents (Help menu)
Opens this manual in the online version at the 1st page.

Help (F1) (Help menu)
Displays help on the current module.

About DBSWIN (Help menu)
Registration of the program and display of the registered modules and versions.

1.18 System requirements

Hardware and software

The PC and its components (monitor, printer, etc.) must be set up according to IEC 60601-1(EN60601-1) if they are operated within the vicinity of the patients (up to 1.5 m away from the patient examination area).
- The safety requirements of the PC system may differ depending on the combination with other peripheral equipment (video camera, scanner, intraoral X-ray imaging system). Further information can be found in the user manuals or may be derived from regulations valid for the system installation location.

PC

The following information merely states the requirements for the computer system. The function of Air Techniques hardware and software might still be impaired as a result of peculiarities of the customer's hardware and software landscape even if these system requirements are met. In these cases, Air Techniques assumes no liability for ensuring the trouble-free operation of the Air Techniques hardware/software.
If additional systems are connected up to the PC, these system requirements may change. Take the system requirements of all connected systems into account.

CPU:	≥ Intel Pentium IV compatible, 1.4 GHz
RAM:	≥ 1 GB (2 GB recommended)
Operating system:	Microsoft Windows 8.1 (not Windows RT) Microsoft Windows 10 (from Pro) Microsoft Windows Server 2016 Microsoft Windows Server 2019
Hard disk:	Workstation (without database) ≥50 GB The memory requirements of the database depend on the number of images taken at the office. (Camera image: Approx. 1 MB, X-ray image: Approx. 2 MB - 10 MB)
Drive:	DVD-ROM
Data backup:	Daily data backup
Interface:	Ethernet ≥100 Mbit/s USB (for installation)
Graphics board:	Resolution ≥ 1024 X 768 Depth of color 32-bit, 16.7 million colors
Diagnostic monitor:	In accordance with DIN 6868-157, room category 5 or 6 (depending on the requirements)

File system

NTFS is strongly recommended as the file system for the storage medium of the DBSDATA DBSWIN database! An existing FAT32 file system can be converted to NTFS with the Convert.exe Windows program.
DirectX Version 8.x or higher

NOTICE
In conjunction with the Air Techniques CamX intraoral camera system and the ScanX and SensorX X-ray imaging systems, different PC specifications may be necessary. Detailed information can be found on the DBSWIN DVD or at www.airtechniques.com.

Extension for the connection of Air Techniques' CamX intraoral video system

Extension for the Air Techniques X-ray system ScanX and SensorX

NOTICE
The Air Techniques X-ray image system handles essential data. Loss of this data may require new X-rays to be taken. The program was designed to avoid data loss if at all possible. To ensure this stability, the following minimum system requirements are required for the operation of Air Techniques X-ray imaging systems: Long-term archiving system with long-term stable storage media (MOD, WORM, CDR, DVD-RAM) Recommended: MOD with fast PCI-SCSI-2 controller

Monitor

17 image tubes with 0.26 mm pitch spacing
Horizontal frequency to 92 kHz, vertical frequency to 160 Hz
TCO 95, MPR II, TÜV-GS, CE mark and X-ray Ordinance

NOTICE
Depending on the graphic card monitor combination used and its settings (e. g. resolution, depth of color, contrast, brightness) the quality of the monitor display can be very different. In particular, the gray scale display and the level of detail can be different. If the monitor image is used for diagnostic purposes, it is necessary to check that the quality is sufficient during the constancy checks.

PC printer

In principle, all printers that can be activated under WINDOWS

NOTICE
Depending on the printer model used, printer settings (e. g. high-speed printing mode with reduced quality) and paper grade, the quality of the printouts can be very different. It is recommended to use the quality paper recommended by the manufacturer.
If printouts are to be used for diagnostic purposes, it will be necessary to check the quality by printing out the images made for the constancy checks. A printout in DIN-A4 full format is not recommended due to quality concerns!

2. Data backup

2.1 Data backup with the Server Manager (see also section 10. - Server Manager)

CAUTION
A backup of the data is absolutely necessary since the failure of the system can lead to a loss of data. It protects you against loss of data due to incorrect operation or destruction (fire, water ...) of the system.

CAUTION Data loss
All the data generated after the backup is no longer available after the backup has been restored.
- Before restoring the backup, ensure that the new data has been backed up separately.
- Import the new data of the backup restoration separately.

Directories to be backed up

The directory structure refers to installations with Windows 10. The directory structure can deviate for older Windows versions.

For a DBSWIN standard installation, the image and patient data are located in the \DBSData directory. In the Configuration menu, it is possible to see where the data of an office is stored on the Office page. For more details, please read the section on Configuration.

Directories that must be saved are:

\DBSData	Complete database (incl. office databases, global data configuration, archive databases with X-ray and video, test database)
\Program files (x86)\Air Techniques	Program files
\Programdata\Air Techniques	Configuration and temporary files

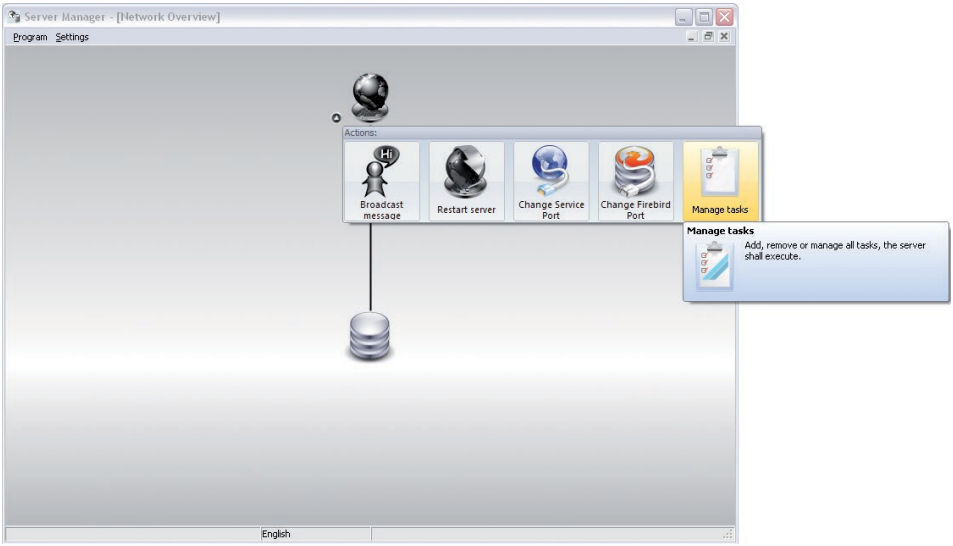
For an installation that deviates from the standard installation, the following directories must also be backed up:

\XrayImg	X-ray archive database (only for individual installation)
\VidImg	Video archive database (only for individual installation)

Preparations on the Server Manager

CAUTION
No image data is stored via the backup on the Server Manager. This must be backed up with a complete data backup.

The database must be saved with the Server Manager (only installed on the computer with the SQL database under Start/All Programs/Air Techniques/DBSWIN/Server Manager). To do this, a new task must be created using Manage Tasks which starts a daily backup of the SQL database (see also 10. Server Manager). This backup should be started at least 30 minutes before the complete data backup (depending on the size of the SQL database). The starting time should be selected so the interval between the backup via the Server Manager and the complete data backup is not too large in order for all changes of the day to be backed up. The backups are written to the ...\DBSData\Backup directory. 20 backups are stored as standard. Thus, the 21st backup deletes the 1st backup.



Complete data backup

After the SQL database has been backed up via the Server Manager, the complete \DBSData directory must be backed up using an external backup tool. In the event of deviations from the standard installation, it may be necessary to back up additional directories (see Directories to be backed up) under certain circumstances. The complete data backup can be carried out along with the daily office data backup.

3. Configuration

CAUTION
Risk of data loss due to incorrect configuration
Configuration must only be carried out either by Air Techniques personnel or by a suitably qualified person approved by Air Techniques.

3.1 Central activation of the software

DBSWIN must be activated in order to use all of its functions fully.
Without activation, 30 patients can be created with the full range of functions of the software. From the 30th patient onwards, a 30-day grace period starts during which the software can be activated. During this period, more patients can be created but not after it expires.
To carry out activation, proceed as follows.

Transmission of the registration data

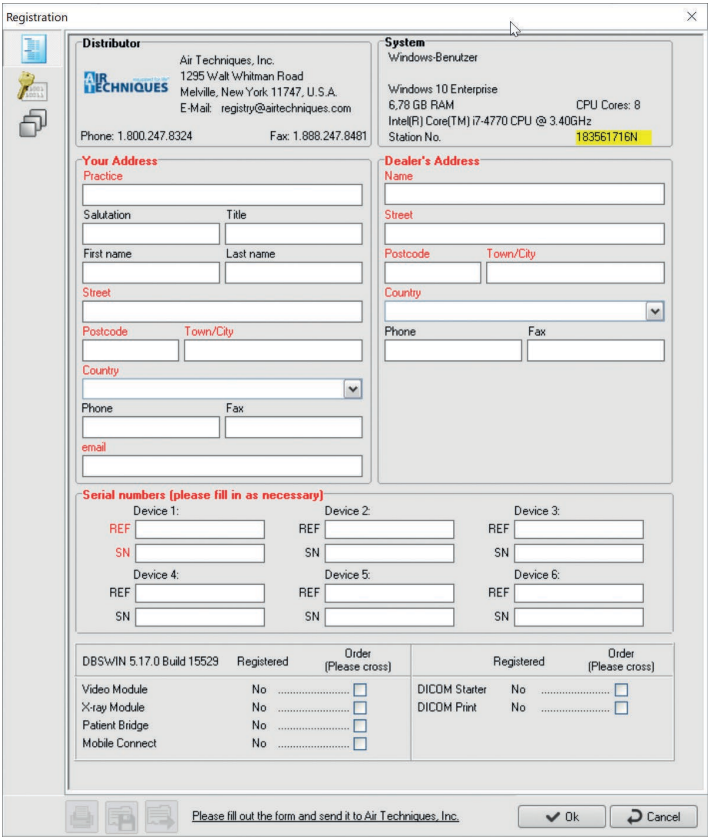
Note that additional costs can accrue during the registration. The prices are given in the current price list of Air Techniques or you can request them from the dental trade.
Start the DBSWIN software.
The DBSWIN registration window appears.

The registration window can also be opened later in the Help menu with the menu item About DBSWIN Click on the Register button.
The Activate dialog window appears.

The buttons in the left area can be used to reach the further dialog window in order to enter the data.

Form

This button is used to swap to the dialog window where the necessary ordering data can be entered. Click on the Form button.



Complete the registration by telephone, fax, e-mail or electronic means.
For registration by telephone, please have the information on the order form and the "workstation no." ready. Enter the workstation number in the "System" field.
For registration by fax, complete and print the order form and send it to the fax number given.
For registration by email, export the order form as an XML file and append it to the email.
For electronic registration, you need to have a functional internet connection. Access data may be needed for an internet connection via a proxy server.

Print order form

Export order form

Send the order form by electronic means

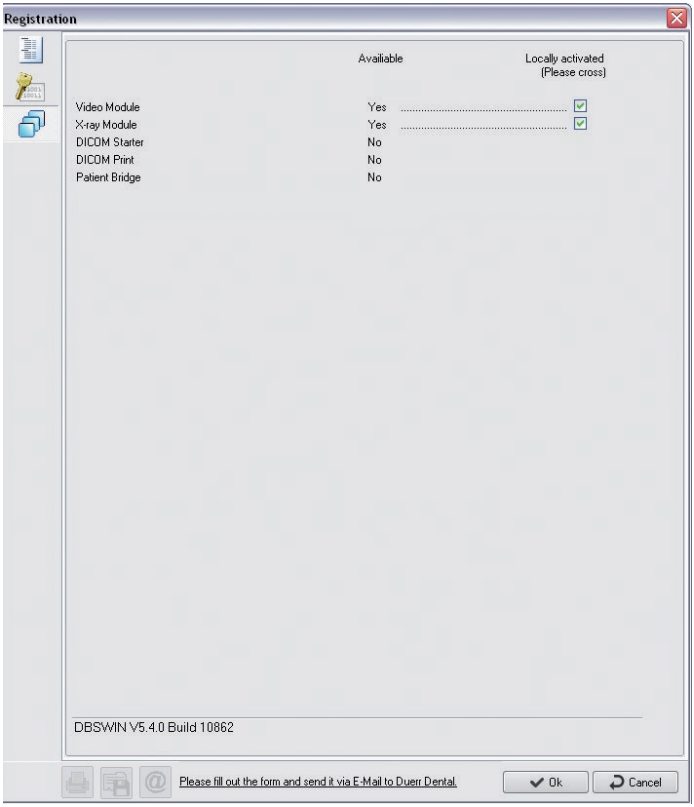
Enter the release code centrally

Code

This button swaps the user to the dialog window where the DBS Code that you obtain from Air Techniques is entered. When the code has been received from Air Techniques:

1. Start the DBSWIN software and open the registration window.
2. Click on the Code button.
3. Enter the DBS Code.
4. The central activation code can be entered on any workstation in the network.
5. Confirm the entry with OK.
6. A message appears.

Confirm with OK and observe that the dialog window for activation of the locally available modules appears.



If the dialog window does not automatically appear, proceed to Local modules to open dialog window.

Local modules

This button swaps the user to the dialog window where the modules for a workstation are activated. Click on the Local Modules button to check the local settings on any workstation. The modules, which have already been activated, can be seen in the Available column. Activate the check box of the modules to be activated in the Locally activated column on the local workstation.
Confirm the entries with OK. Confirm the message with OK and restart the software.

General

When starting the DBSWIN software, the Configuration folder is deactivated. The Configuration folder is shown by clicking on the Options/ Configuration menu. The basic DBSWIN properties can be loaded and set in the Configuration folder.

CAUTION
Risk of data loss due to incorrect configuration
Configuration must only be carried out either by Air Techniques personnel or by a suitably qualified person approved by Air Techniques.

Save changes

Cancel changes

3.2 Configuration of the modules

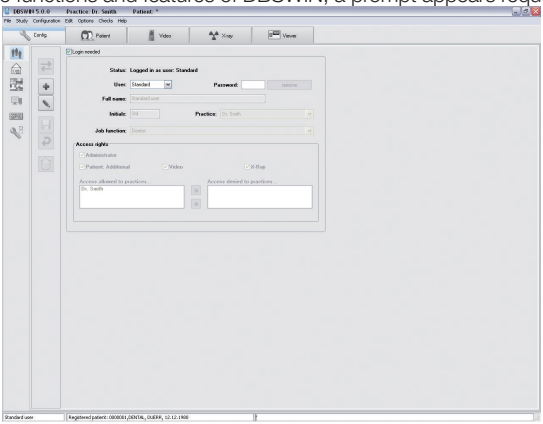
Configuration/Operator

General

The Operator page is used to list, administer and select the users of DBSWIN. The program allows a number of users to be registered who will be checked during login. Changes to user data can also be carried out here. Each user can have specific or all of the access rights of a specific office area.

Login required

The program can be started and the basic functions and features of DBSWIN can be changed without password if the Login required check box is deactivated. With the help of the Login required check box, the use of the device by authorized persons can be generally controlled. When starting the DBSWIN program or changing the functions and features of DBSWIN, a prompt appears requesting a password.



Meaning of the displayed dialog fields

Status:	Name of currently logged-in user
Operator:	List of already available users of the current office
Password:	Password of the user
Full name:	Full name of the user
Initials:	Initials of the user
Main office:	List of main offices of the user
Function:	Function of the user within the selected office
Access rights:	List of users and their access rights

The login window

The main office for the selected user will be displayed. In the event that the user is registered at more than one office, the desired office can now be selected from the list.

NOTICE Entering passwords
If the name and password of a user are identical, the password does not need to be entered at login (e. g. User = Müller, Password = Müller). If the check box is empty, DBSWIN can be started without user and password prompt. Access rights and users cannot be managed with this option.

Change user

There are two methods of changing the active DBSWIN user.

In the program

The active user is displayed in the status bar at bottom left. Click Name to select another user of the current office.

Starting and ending with Login window

End the program up to the login window. Choose the required user name from the list displayed and enter the correct password. The main office for the selected user will be displayed. In the event that the user is registered for more than one office, the desired office can now be selected from the list. Confirm the selection by clicking the Login button. The user is now logged in. The current user name is now displayed at the bottom left of the screen.

NOTICE

If a user is not assigned to the selected office, this is automatically switched to the main office assigned to the user.

Edit user

To edit users and access rights in DBSWIN, appropriate administrator rights are required. The edit mode is activated by clicking the Edit User Data button. Makes changes to the entries in the text fields for full name, initials, office, and function.

Save user

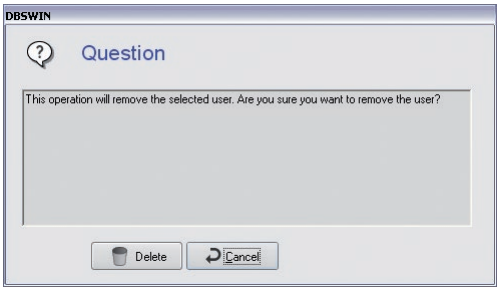
On completion, changes are saved by clicking the Save button. To discard the changes, click the Discard Input button.

Create new user

To edit users and access rights in DBSWIN, appropriate administrator rights are required. Clicking the Edit Operator Data button activates the edit mode and clears all fields. Assign entries to the text fields for full name, initials, office, and function. If a user in the appropriate list is allocated the Doctor function from the list belonging to the field, then this name will also appear as Main Doctor in the Patient Record.

Delete user

To delete users and access rights in DBSWIN, appropriate administrator rights are required. Choose the appropriate user name from the list. Click on the Delete Operator button to start the deletion process.

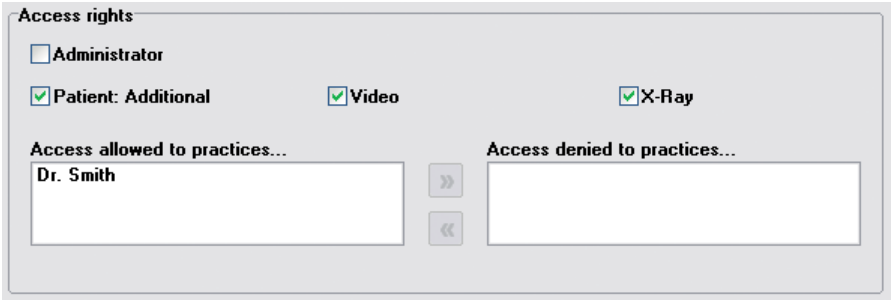


The user is permanently deleted if you click on the Delete button.

Description of access rights

DBSWIN allows different access rights to be conferred on each individual user. Care should be taken to allow only a small number of suitable users to have administrator rights.

Administrator:	Creating or editing user data Creating or editing office data Configuration
Patient supplement:	Display additional information on the current patient by clicking the Info button
Video:	Access rights to video module
X-ray:	Access rights to X-ray module



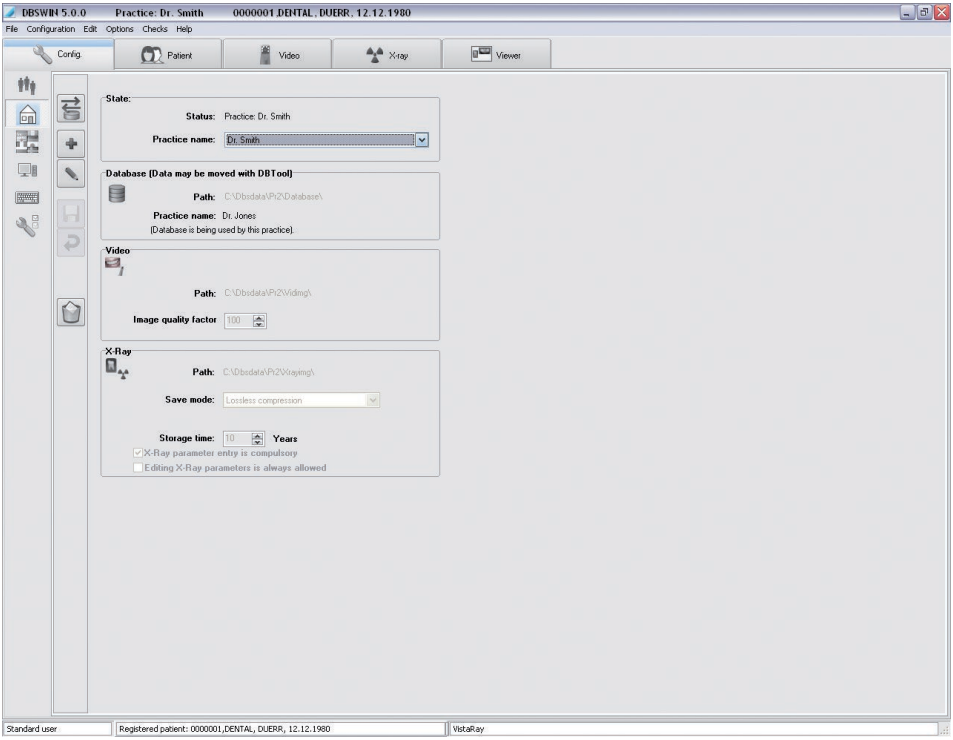
By marking the individual function areas of DBSWIN, you have the ability to assign each user individual access rights. If the Administrator check box is activated, this user will have access to all functions. If a user should have access to several offices, click on the office name in the right options list.

Clicking on the button « assigns the office to the user.
To remove an entry:

Click on an office name in the options list on the left and then click on the button ».
Save the changes by clicking the Save button.

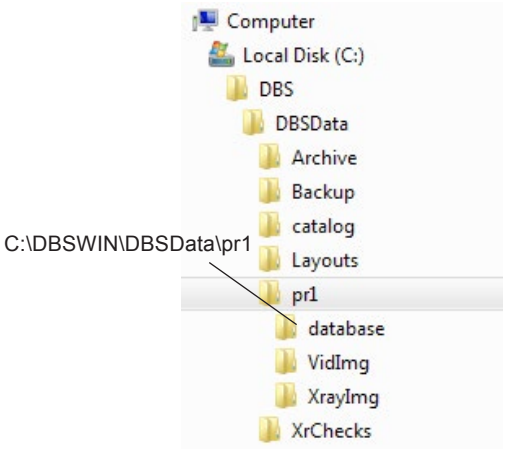
To discard the changes: Click on the button .

Configuration/Office



The Office menu in Configuration allows the possibility of entering and amending other offices. (e.g. for group offices) or databases. The relevant database paths for the different offices are set up here.

Directory structure in DBSWIN (standard installation)



As shown above, a database directory ..\Dbsdata is created for each office. (first office = ..\Pr1\..; second office = ..\Pr2\.. etc.) In each office directory, the corresponding database is located in the ..\Database subdirectory. The office directory also stores the video images in the ..\Vidimg subdirectory and the X-ray images in the ..\Xrayimg subdirectory. Each office is assigned an office ID when the office name is set up.

Creating a new office

In order to create a new office, click the Create New Office button. All data fields will be cleared and a name can be entered for the new office or database. The paths required by the program will be automatically suggested. However, it is possible to enter your own program paths. Repeat these steps for video and X-ray.

Save

Save any change by clicking the button Save New or Edited/Changed User Data. To discard the changes, click the Discard Entry button.

Editing an Office

In order to edit the current office data, click the Edit Office Data button. You are now able to change the name of the office and to reassign the paths. This will be necessary when the physical position of the files has changed (directories have been moved, rearranged). Save changes by clicking the Save button. To discard the changes, click the Discard Entry button.

Delete Current Office

Users with administrator rights are able to delete individual office data. Select the office to be deleted and click the Delete Current Office button. The appropriate entry will be deleted.

NOTICE

Only the path instruction will be deleted and not the paths themselves. This must be carried out manually, in this case via Explorer.

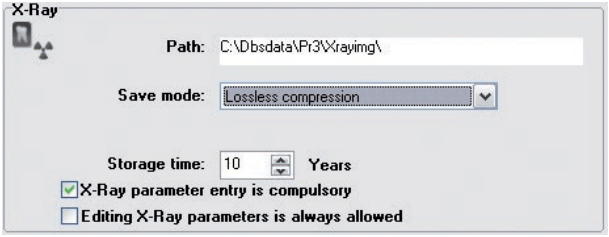
Changing an Office

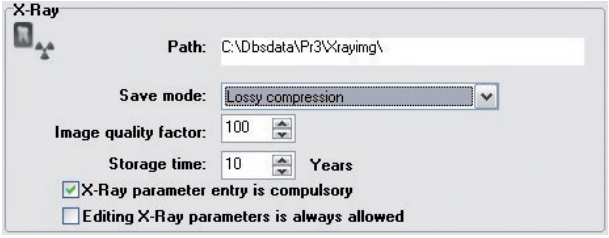
In order to change to another office, click the Pull-down Field next to the current office. An options list of all the offices entered under DBSWIN appears. If available, select an entry from the list and confirm with left click. To switch to the selected office, click the Change Office button. The current office is now displayed at the top of the screen.

X-rays

The retention time field enables you to enter how long the X-rays are to be kept in the database. X-rays that fall within this retention time cannot be deleted. You can select whether the entry of X-ray parameters is necessary for an X-ray exposure or not with the X-ray Parameters Are Mandatory Entries check box. If you want to change these parameters later, the X-ray Parameters Always Changeable check box must be set.
There are three methods of storage for X-ray images (the file size and image quality values are not fixed; they are dependent on a number of factors):

- No compression (100 % file size)
- Loss-free compression (50–60 % file size)
- Lossy with compression (100 = 40–50 % file size; 90 = 20–30 % file size)





NOTICE
These settings must be selected according to the applicable codes

In general, the image loading time will increase the lower the compression ratio. In lossy compression, an image quality factor of 100 means that the image information can theoretically be restored to 100%. If no statutory regulations are stipulated, a lossy compression with an image quality factor of 80–90 is recommended.

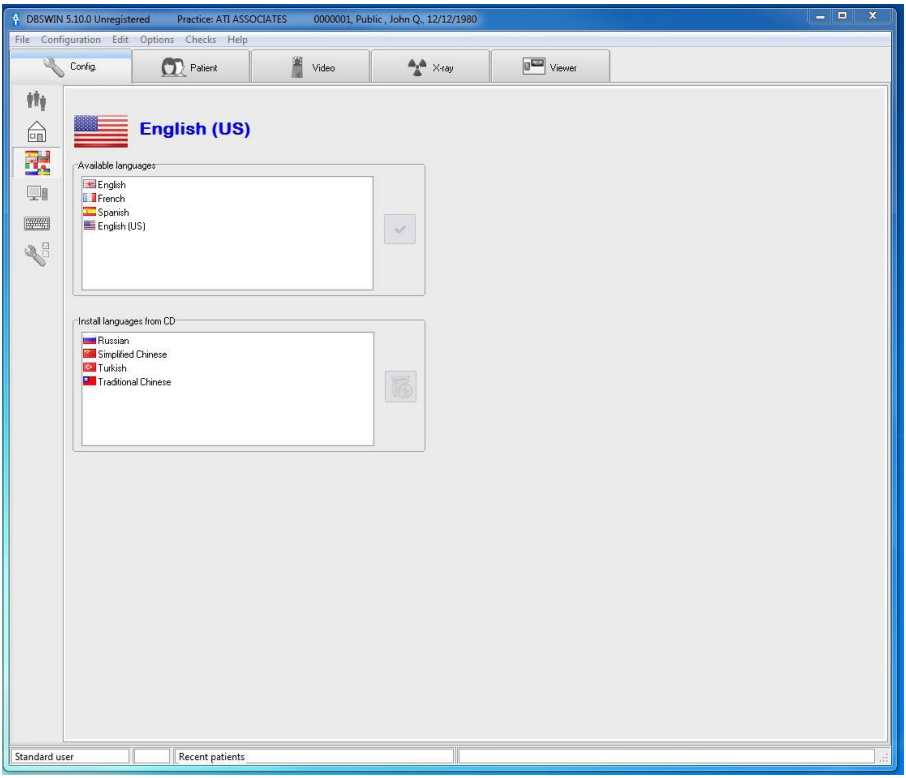
Video

A value between 0 and 100 can be set in the Image Quality field. An image quality value of 100 means that video recordings are saved with high quality and low compression. A lower value raises the compression and lowers the storage necessary, but lowers the quality of the image. Recommended quality factor = 70

Database

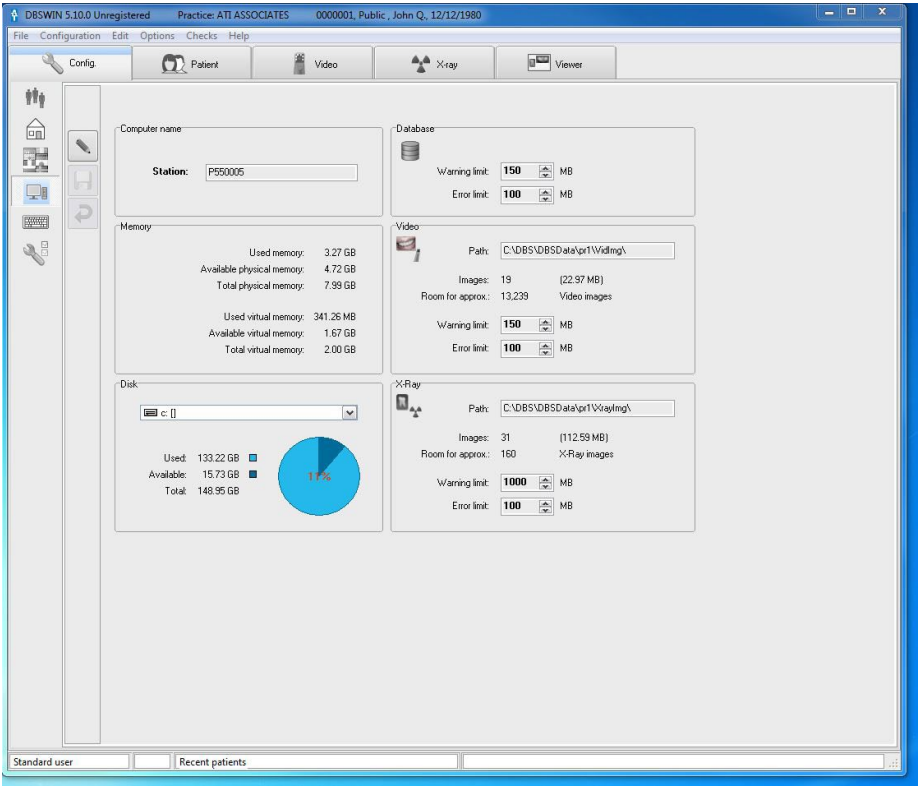
The path to the database currently being used is displayed here and the office ID that is connected with this database.

Configuration/Language



DBSWIN supports a variety of languages. The four languages German, English, French and Spanish are installed during the initial installation. To switch to the required language, left click (left-hand mouse button) on the appropriate language in the upper options list. Confirm your selection by clicking the Change Language button (on the right-hand side next to the options list of Available Languages). The changeover to the new language takes effect the next time the program is started. You can use the left mouse key in the lower options list to select national languages that are not yet installed and reinstall them from DBSWIN-DVD (right next to the options list Reinstall Languages from DVD) by clicking the Reinstall Selected Languages from DVD button.

System Info



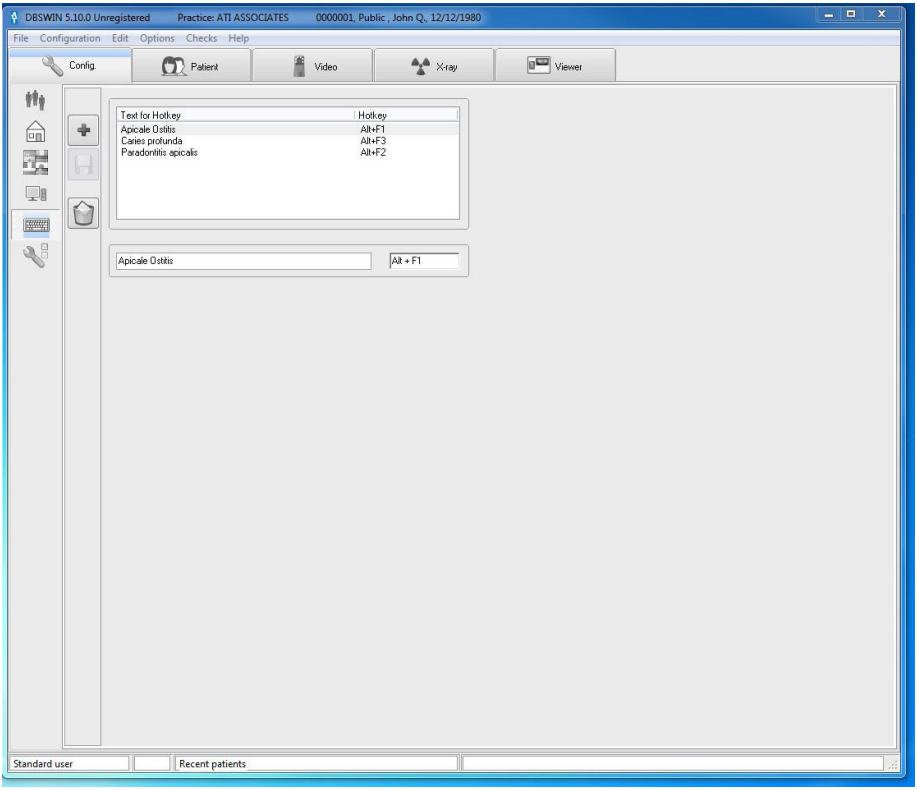
Information, such as memory storage and system capacity, is displayed here. The following fields can be edited by the Administrator. Click the Edit systeminfo button. The name of the computer can be edited. Each station computer should be assigned an individual and unique name for identification purposes when working in a network.

Warning/Error limits

Warning or error limits can be set in the Database field or in the Image Files field. If the storage capacity available on the data storage device falls below a preset value, the system will issue a warning message. If the error limit is reached, no more new data or images can be recorded.

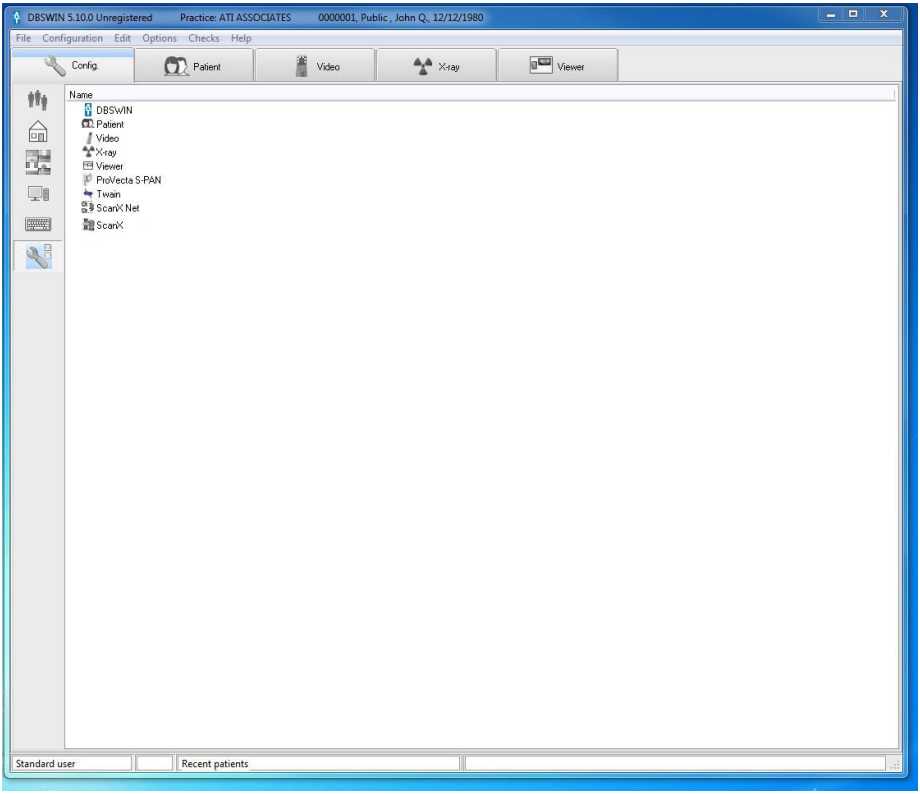
NOTICE
Set the warning limit to a value that gives you sufficient time to react, for example, to transfer data or obtain a new data storage device.

Shortcut keys



Shortcut keys allow faster access to both Comment and Diagnosis in the image information box. The assignment of shortcut keys can be changed here. You may edit existing terms in the editing field below the selection box or add new terms by clicking the New Shortcut Key button (empty index card). The right field displays the key combinations entered. Save your entries by clicking the Save Shortcut Key button (diskette). To delete an entry, select it from the list and click the Delete Shortcut Key button (recycle bin).

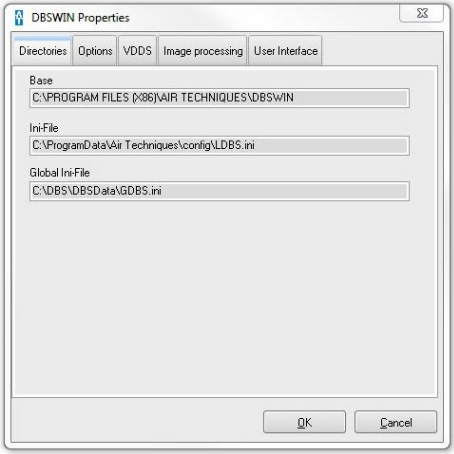
Configuration/Modules



The Modules menu page is for setting of the individual program modules.

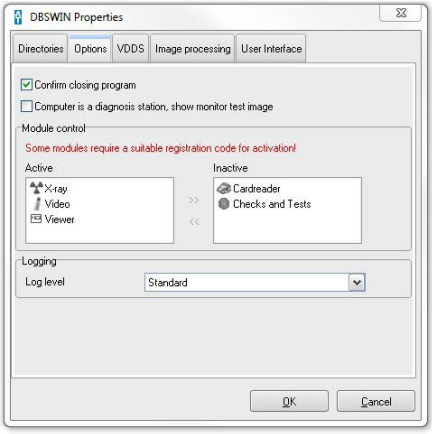
3.3 DBSWIN module (main module)

Directories tab



Displays the program directories and storage location of the initialization file LDBS.INI.

Options tab



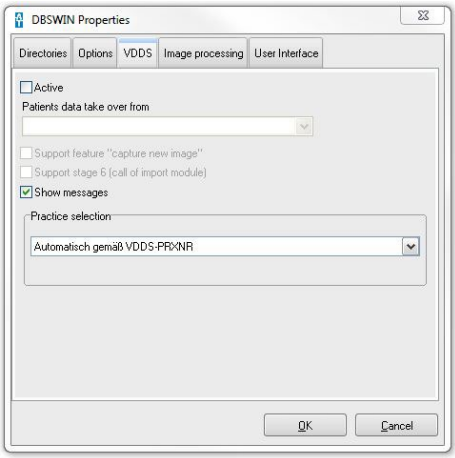
If the Confirm Program Close check box has been activated, you will be asked to confirm a prompt when you try to close DBSWIN.
If the Computer is a Diagnostic Station check box is activated, the monitor tests required according to the configuration are carried out when DBSWIN starts.

NOTICE
The check box must be activated if diagnostics are run on the monitor of the computer, see chapter 7 "X-rays" - "Legal Regulations".

Module Control allows you to activate or deactivate modules. Select the desired module and click the Activate Module button (double-arrow to the right) or Deactivate Module (double arrow to the left). DBSWIN must be restarted for any changes!

VDDS tab

For configuration, you need to have administrator rights in Windows. In addition, DBSWIN needs to be started by right-clicking and by using the "Run as administrator" function.



Supported VDDS media levels:

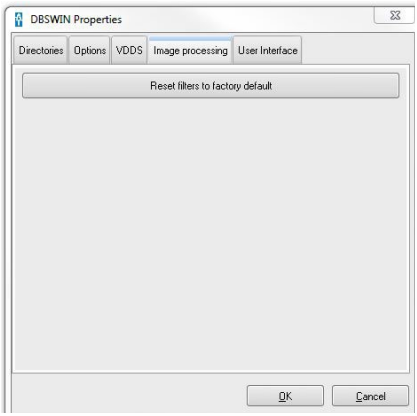
- VDDS media level 1
- VDDS media level 2
- VDDS media level 3
- VDDS media level 4
- VDDS media level 6
- SupportNew

The VDDS media interface for communication with certain practice management programs can be configured using the Active check box. To do so, the VDDS media-capable patient management program must also be selected in the list box. For this purpose, the file, "VDDS_mmi.ini" under "C:\Windows" needs to be adapted. The adaptations depend on the software that is used.
Optionally, the support of image data and the VDDS media level 6 (call-up of the import interface of the selected practice management program) can be changed. The Display Messages option enables errors that have occurred during the operation of the VDDS media interface to also be displayed.

Automatically according to VDDS-PRXNR:	To do this, DBSWIN must offer an identical image of the offices of the selected practice management program. The important thing here is the identical numbering of the offices with the VDDS-PRXNR that is always PRXNR=1 for the first office. The VDDS-PRXNR can be viewed and adjusted in the DBSWIN practice management when VDDS is activated.
Manual office selection:	If a VDDS order is received that does not belong to the current office, the office that must be switched to is displayed so that the order can be received. If there is no office with the VDDS number, the order cannot be accepted. In that case, the office must be created in DBSWIN, and the VDDS order must be sent again in the third party program.
Ignore VDDS-PRXNR and continue work in the active office:	The patient is searched for or created in the active office.

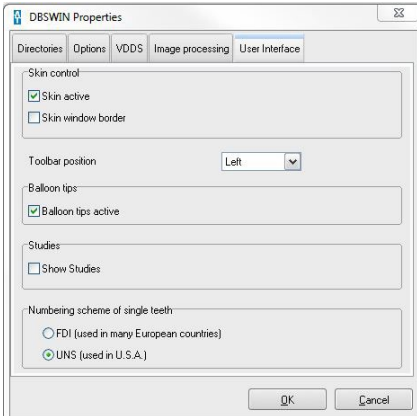
Currently it is possible to support patient transfer and the return of performance (type of image, object, opt. X-ray parameters, thumbnail) and image data of an image.

Image processing tab



The Filter settings are set to the factory settings. Current settings can be replaced.

User interface tab



Here you can activate the skin control of the software user interface, the position of the function bar and the display of the tool tips. Selecting teeth numbering scheme (European or U.S.A.).

Activate Skin Active so that the appearance of the software user interface is adapted to your usual Windows skin (recommended).

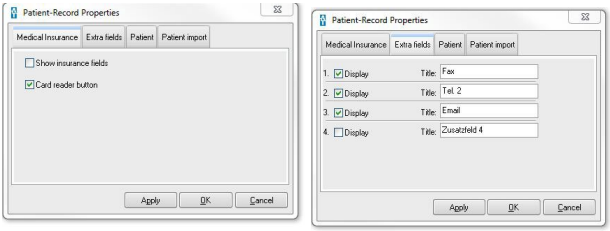
Select left or right in the Position of the Function Bar list. The position bar is displayed at the selected position the next time the software is started.

Activate Balloon Tips Active to display tool tips on the function for individual software elements (recommended).

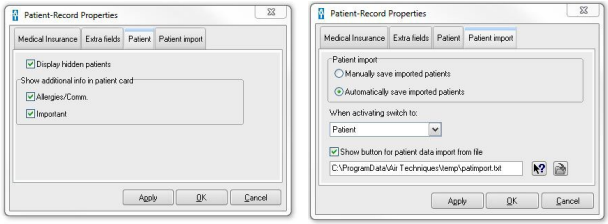
Activate Display Examinations to view the list of examinations that are available for a patient via the Examination menu and to swap between examinations. The Examinations function is mostly used in conjunction with DICOM (see DBSWIN DICOM Manual, No. E7204). If necessary, you must order and release DICOM via the central activation center.

Select between the European or U.S.A. teeth numbering scheme used for examination. The default numbering scheme is the UNS system normally used in the U.S.A.

3.4 Patient modules (Patient Index)



The Medical insurance tab (image on left) can be used to activate or deactivate the display of the insurance fields (STATUS) and the Card Reader button. The Extra page enables the selection of which, or how many, extra fields in the patient record card should be displayed and to edit their labeling.



On the Patient page you can choose that all patients who have been set to be hidden should be visible again in the patient select list. If you want to display the first text line of the Additional Patient Information Note in the lower area of the patient index, set the desired check box in the area Show Additional Information Directly on the index Card.

The Patient Import tab allows you to define an automatic program change to a selected module when a patient is activated. If, for example, you want to go straight to the X-ray module when a patient is registered by an external program, select X-ray and activate the Automatically Save Imported Patients check box. A registration selection list is generated if several patients are imported from an external program and the Automatically Save Imported Patients check box is not activated. The list is then displayed in the patient record when the patient is imported (via the button Read the Patient Data from the Import File). This function allows a local waiting list to be produced, even on a PC at a remote location (Patient Registration PC). To do so, the corresponding transfer file for the desired computer station must be created. You have to specify the location of the import file in DBSWIN when carrying out a patient import process. The directory and file name can be entered directly in the field or a file can be assigned by clicking the File Selection button (directory tree) in the browser dialog. Restart DBSWIN after changing the directory or file name. For more information, see the data exchange.pdf file in the DBSWIN directory.

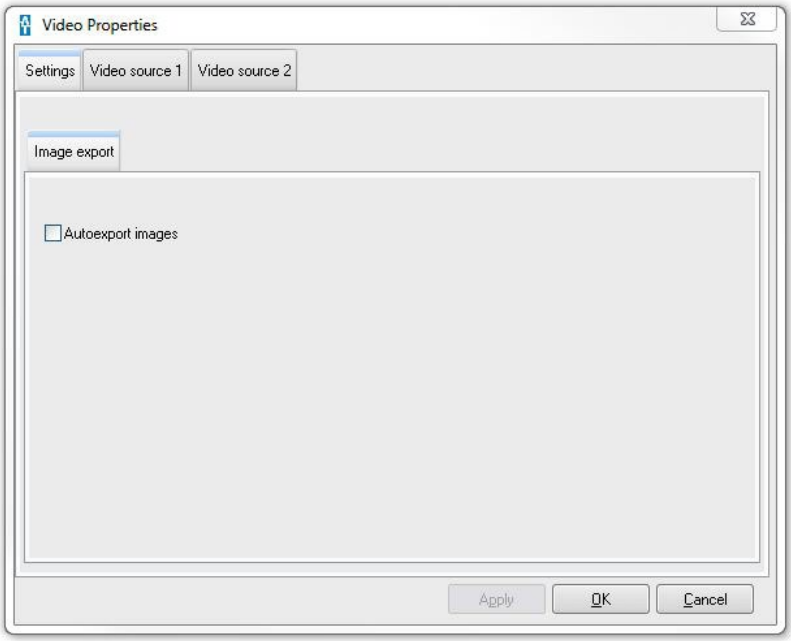
If the Manually Activate Transferred Patient check box is set, the button Read the Patient Data from Import File must be clicked to read in the patient data from the list.

3.5 Video module

In the Video properties assign the corresponding camera or control type to the software. If you use several video sources, you can specify the camera and control type for each source.

NOTICE
If a PCI bus master frame grabber is used, ensure that the hardware supports this.

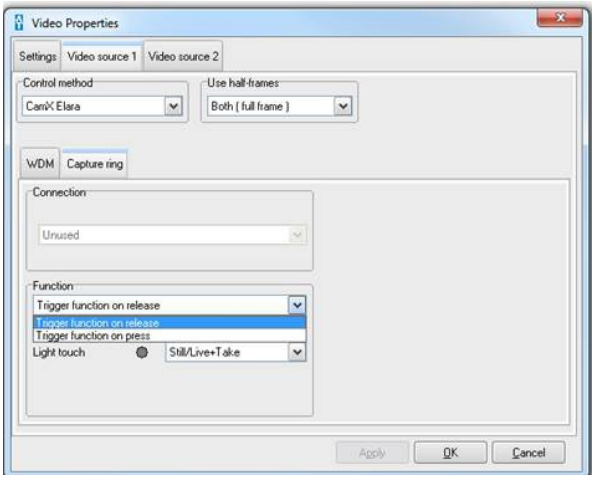
Settings tab



If the Export Images Automatically function is activated, each video image saved in the database is also copied to any defined path. The selection of the path, the file format and other properties is carried out in the Light Table Properties dialog on the Export/Email/Export Options tab in Autoexport mode.

Video source 1 and Video source 2 tab

If a camera is connected to the computer as the only camera, the settings must be made under the Video Source 1 tab. If a second camera is connected, the settings must be made under Video Source 2 because the Video Source 1 is occupied by the first camera.



Select the desired camera in the Control method area drop down menu. If necessary, follow the installation and configuration manual of the connected unit.

Select Both (full frame) in the Use half frames drop down menu. If the Full frame setting is used, check the recordings because performance and movement-induced horizontal streaks can occur on your images.

Set the camera button in the Function drop down menu. Select either the trigger function on release or trigger function on press for the desired operation of the camera button.

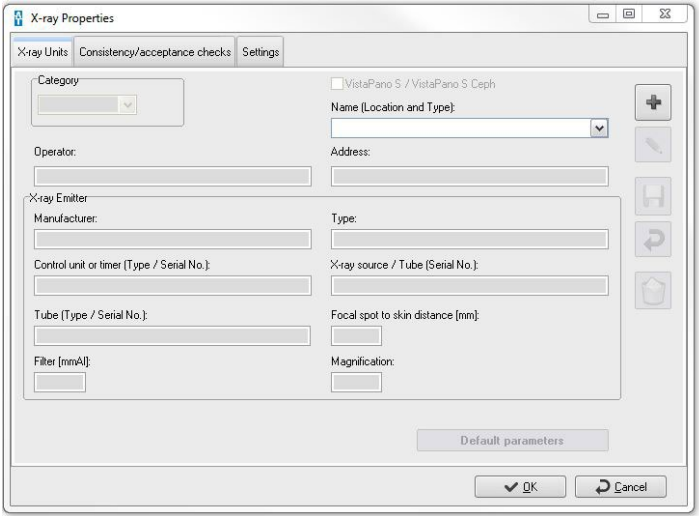
Update camera list

The list of connected cameras is updated by clicking on the button.

Noise Reduction: When an image is recorded, the selected number of images in a certain time period is recorded. A new image is calculated from these images where interferences are compensated to the greatest possible extent.

3.6 X-ray module

X-ray station



Designation:	X-ray station designation, list (mandatory)
Manufacturer:	Manufacturer of the X-ray unit
Type:	Name, type, and serial number of X-ray unit
Category:	X-ray unit category (mandatory)
Magnification:	Magnification factor (≥ 1,000)
Operator:	This information is automatically copied to the check forms.

All mandatory data must be present!

The parameters of different X-ray sources can be set on the X-ray Stations page. By clicking on the button Edit Name or Default Parameters you can set the name and the parameters of the X-ray system currently selected. Click on the button Create New X-ray Station to create a new X-ray station. The contents of the Manufacturer, Type, Operator and Address fields are automatically adopted in the forms of the checks. The magnification factor (the object will be displayed larger than life) serves to define the projection of the object planes via the image reception plane and is used for the calculation of the image resolution of the image displayed on the monitor. The values can either be found in the documentation supplied by the manufacturer or must be calculated.

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 image.
- Do not use a panoramic image for the measurement.

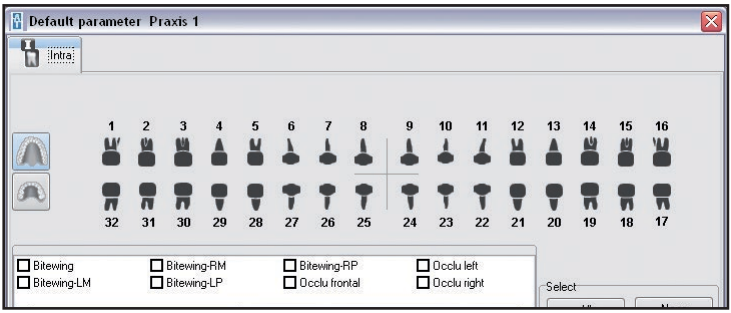
'The parameter input is the same for both the procedures described above!

Click on the Default Parameters button to start entering the parameters. However, the category must be set to Intraoral or Extraoral beforehand.
In addition, you can specify whether warnings appear if checks are invalid and which entry devices should be included in the checks.

Default parameters

After clicking on the Default Parameters button, a dialog window that depends on the selected category appears where you can specify the parameters.
When creating a recording of the corresponding category, the software then automatically suggests the values specified here.

Example: Intraoral default parameters



An object (tooth) has to be activated or deactivated by left clicking the object itself. You can select all objects with the All button. The None button deselects all objects.

If you have selected an object type or object type group, enter the default values for current, voltage, exposure time, and dose area product in the section Default Values of the Selected Objects and then click on the Apply Value(s) button so the values are saved.

If you have installed several X-ray systems, you have the option to apply the default values of other X-ray systems.

Click on the button in the Copy Default Values section with the left mouse key. Select an entry from the list and confirm by clicking on the Copy from button.

The dialogs for the other recording formats (Extraoral, OPG and Other) have the same structure as the dialog for Ceph. Proceed in the same way when specifying the parameters for these formats.

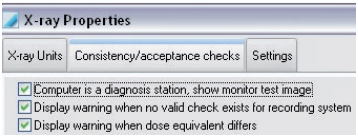
Monitor test

A monitor test with a suitable test image (e. g. SMPTE image) may be required by local, state or national code or regulations to make sure that at least one dental computer station is suitable for diagnosis. Starting DBSWIN displays this image together with an information text window for checking.

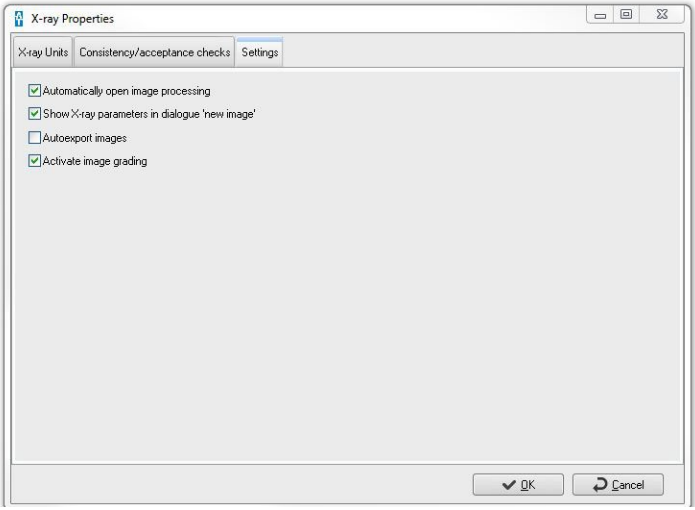
This option can be switched off either directly in this information text window or in the X-ray properties dialog on the Constancy/Acceptance Test page by resetting the check box Computer is a Diagnostic Station, Display Monitor Test Image.

NOTICE

Pay attention to the legal regulations: Depending on local, state or national code or regulations, the monitor test is a statutory prerequisite in diagnostic stations!

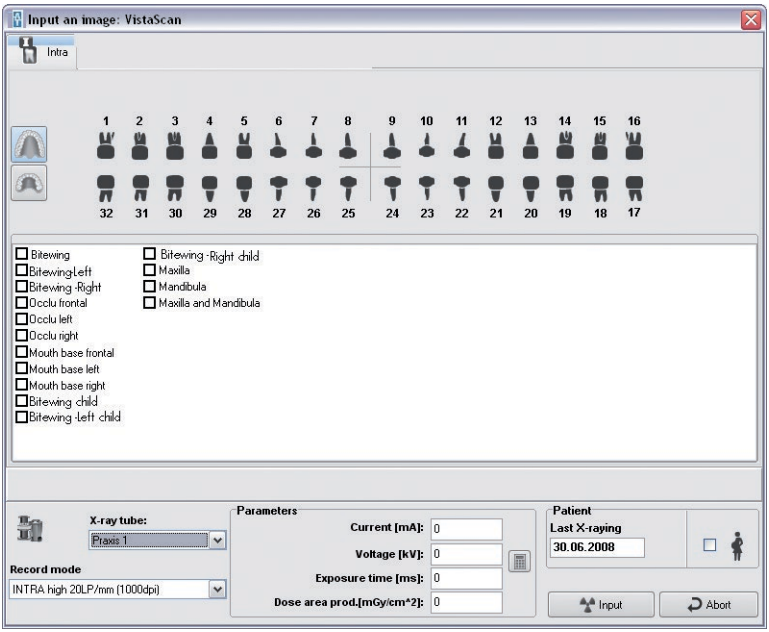


Settings



Automatically Open Image Processing check box
If this check box has been selected, then the Image Edit box will be opened automatically after completion of an X-ray exposure with the appropriate X-ray image standard function.

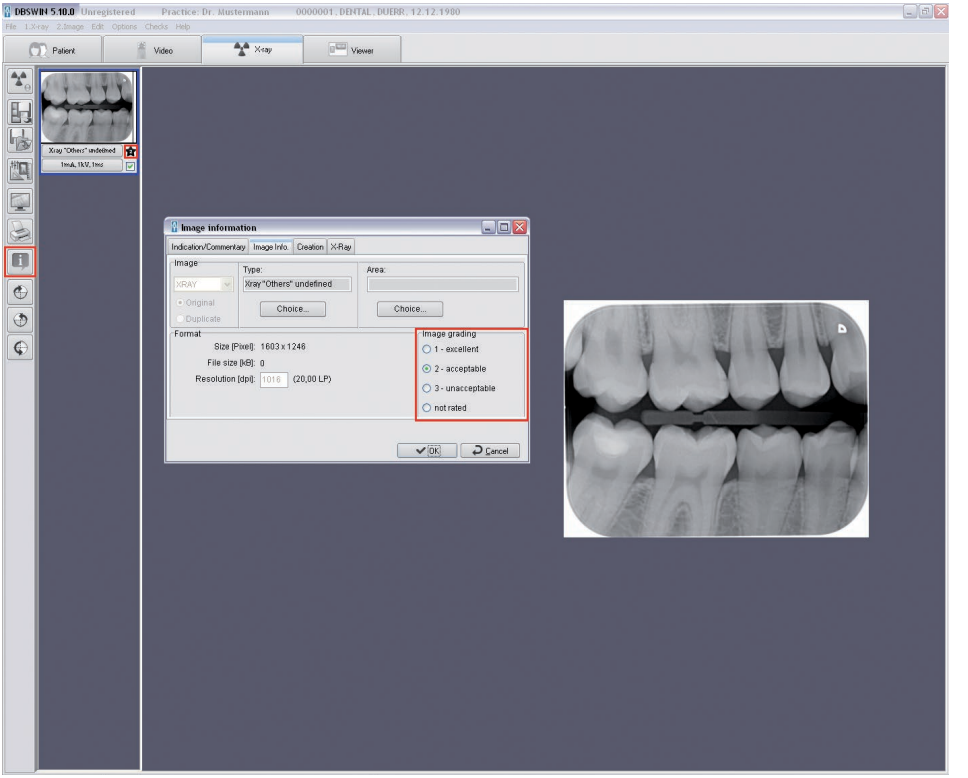
Show X-ray Parameters in Dialog New Image check box
If this check box is selected, the X-ray parameters are displayed in the X-ray module and can be changed there.



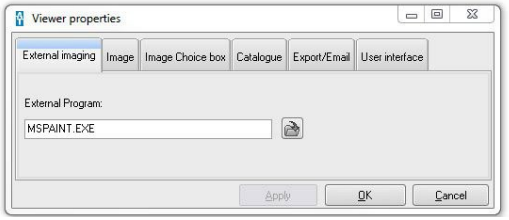
Automatically Export Images check box

If this check box has been selected, any saved images will automatically be exported additionally to the X-ray module. The export format for X-ray images and the export path can be defined via the mode Autoexport, which can be configured in Light table menu under /Export-Email/Export options.

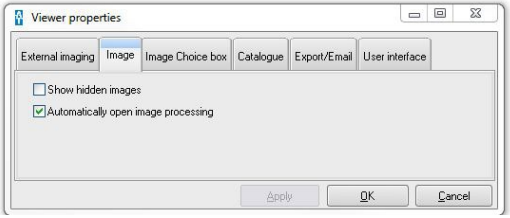
Active Image Grading check box
If this check box is selected, newly read and existing X-ray images can be analyzed. This can be done immediately when they are read in or on the light table.



3.7 Viewer module (light table)

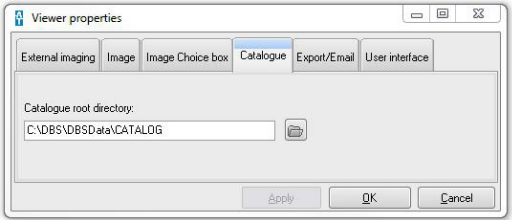


You can enter your preferred processing software for your images on the External image processing page.

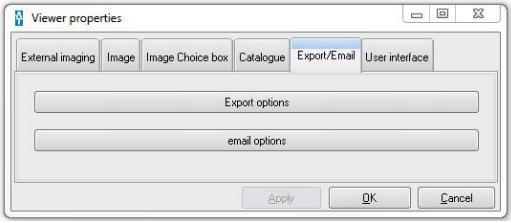


Under Image (second from left), you can choose whether hidden images should be shown in the image select box.

Under image selection box, you can choose whether the image selection box is automatically activated when the light table is opened.



You can set the path of the DBSWIN image catalog under Catalog. The catalog is available for the storage and subsequent opening of a selection of example images, which may be stored in a variety of addresses. These images can be subscribed to any patient. The images can be loaded in the light table with the Light table/Load/Catalog menu item. The Export function can be used to save patient images on the light table in the Catalog.



Under Export/Email, it is possible to configure an image for export or to send an image as an Email.

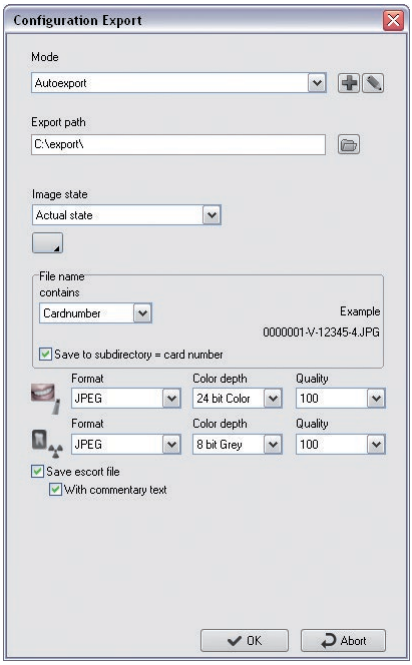
The settings for Export and Email will be assigned the appropriate mode name. Therefore it is important to select a mode name that reflects as accurately as possible the function required, e.g.:

AutoExport:	Settings are used for the autoexport of X-ray and video images. This mode name is predefined and cannot be changed!
Health Insurance:	Image export to the relevant health insurance company

Create new mode

Edit mode

Further functions can be displayed using this symbol or can be hidden. This is possible only for users with administrator status!



: Selection of the export path where the images should be saved. Does not exist for email,

Image Status: Status of the image to be exported,

: Expands the dialog for the specification of the file name: Enter the patient ID or keyboard input

In the Subdirectory ...: Images are saved in the export path subdirectory (corresponds to patient ID).

: sets the format, depth of color and the quality of compressible image formats.

Save Image Info File: The image info file for the image is saved with the image file name+ -info.txt in the export path (Xnnnn-nnnnnnn.JPG-info.txt).

With Comment Text: Image comment texts are written to the image info file.

For video and X-ray images it is possible to select an image format from a list.
Depending on the format it is possible to select the color intensity and the quality of compressed images. A rule-of-thumb for the image quality, which is available after compression of the image file:

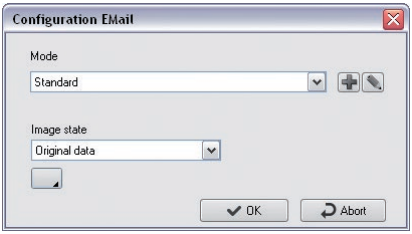
100 -> no visible loss

90 -> negligible loss

80 -> low visible loss

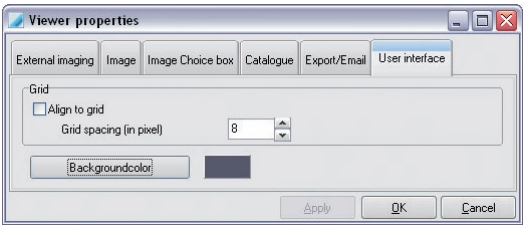
70 -> visible loss

Image Email configuration



The Export path field is no longer available under Email configuration.

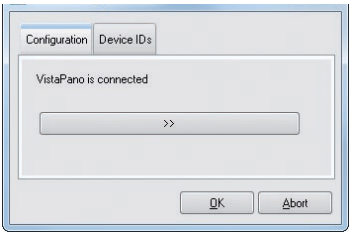
User interface configuration



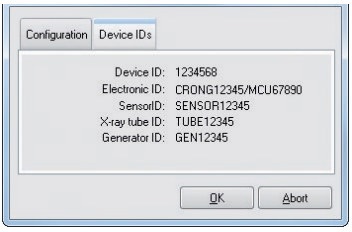
Grid spacing lets you specify the spacing of the lines of the invisible grid on the light table to which the recordings are aligned. The value is set to 25 pixels by default. The background color of the light table can be selected.

NOTICE
Do not send large image files by e-mail! If any problems are encountered, select a larger compression ratio.

3.8 ProVecta X-ray module



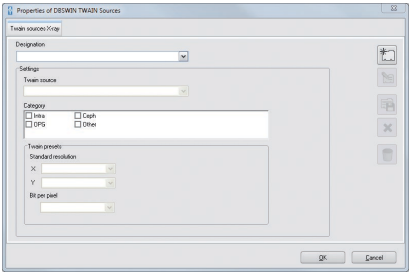
Use the button with the arrow symbol to open the program VistaConfig, in which the devices you are using will be selected.



If ProVecta has been correctly installed, then various unit IDs will be displayed.

3.9 TWAIN module

The Twain X-ray sources module allows X-ray units from other manufacturers (e.g. digital OPGs, image plate scanners, X-ray sensors) to be integrated into DBSWIN via TWAIN. Images recorded via this interface are treated as images recorded with Air Techniques devices (entry in the X-ray log, etc..). An acceptance and constancy test can also be performed with DBSWIN using the unit.



Create new Twain X-ray source.

Edit existing Twain X-ray source.

Edit newly created Twain X-ray source.

Cancel creation of a Twain X-ray source.

Deleted created Twain X-ray source.

- Enter a name for the Twain source under Designation.
- Select the interfaced and installed unit under Twain Source.
- Under Category, select the functions covered by the unit.

If resolutions are transferred by the Twain driver, these must be set under Twain Defaults.

- Select a suggested value under X and Y.

If different values are selected under X and Y, no measurement can be made in an X-ray image with DBSWIN as DBSWIN can only calculate measurements with quadratic pixels.

- Enter a suggested value under Bit per Pixel.

3.10 ScanX module

In this module the control of the scanner of DBSWIN can be configured and tested with the VistaConfig program. The advanced functions available in this program may only be used by trained and certified service technicians.

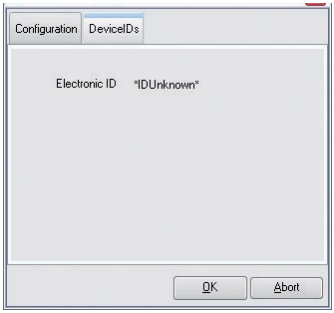
WARNING
All settings made can have a direct influence on the image quality and the functions of the devices.
- Changes must only be carried out either by Air Techniques personnel or by a suitably qualified person approved by Air Techniques.
- Check and, if necessary, correct the changed image quality by importing a test X-ray image.

The VistaConfig program allows use of the following functions:

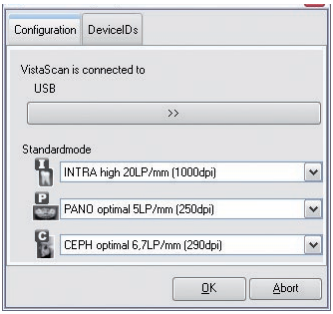
Standard functions
- Read in and display (test) an exposed image plate
- Verify ambient light conditions (Oscilloscope mode)

Further functions
- Adapt available parameter sets or extend by further sets
- Create and save available and current test reports (System Reports)

Standard functions



Where a scanner is connected, the relevant Electronic ID of the scanner is displayed on the DeviceIDs page.

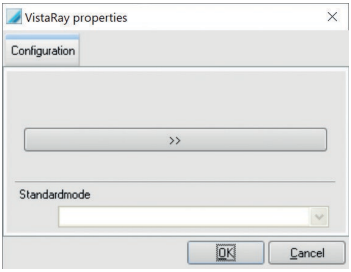


For intraoral and extraoral X-ray exposures, the desired standard Scan mode can be set which will be proposed by default when opening the X-ray parameter mask of the X-ray module.

VistaConfig program

The VistaConfig program is opened by clicking the button with the arrow symbols.

3.11 SensorX module



To operate the SensorX unit, various parameters have to be set.
You reach the "VistaConfig" program where the devices with which you work are selected and configured via the button with the arrow symbols. The settings include the connections of the devices, the calibration data, the printer output, etc. and should only be made by a service technician.

WARNING
All settings made can have a direct influence on the image quality and the functions of the devices.
- Changes must only be carried out either by Air Techniques personnel or by a suitably qualified person approved by Air Techniques.
- Check and, if necessary, correct the changed image quality by importing a test X-ray image.

The "Standard Mode" selection field is used to specify which sensor mode is suggested per default in the X-ray module.
If your sensor is installed correctly, SensorID and ElectronicID are shown. To apply the settings, quit the dialog with OK.

3.12 ScanX Net module

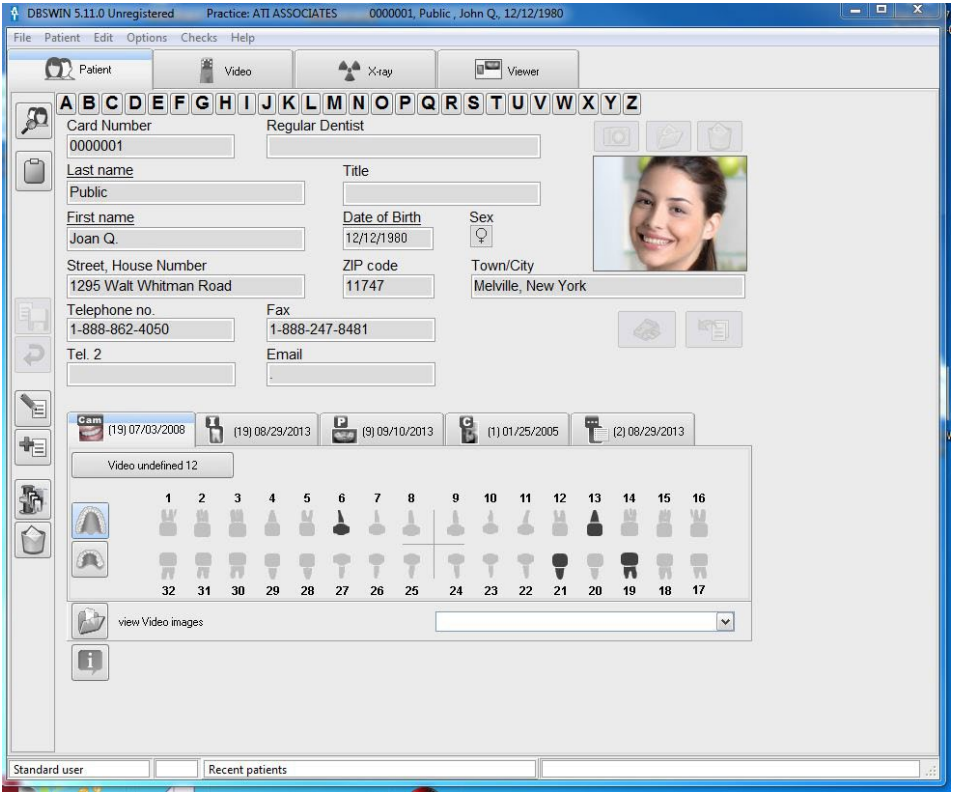
Clicking the button opens the program VistaConfig.

4. Patient Tab

4.1 General

Patient records can be opened, selected, amended, or deleted using the patient index. The index card displays all relevant patient information and an overview of existing images.

Patient View



4.2 Functions

Open patient list, log on patient

By clicking on the Open Patient List button the patient list in which you can select a patient is opened. The selected patient is logged into DBSWIN and his data are displayed in the status line. You also swap between several logged-in patients via the patient list.

All functions can now be carried out for the selected patients (carry out image recording, view images on the light table, etc.).
All externally imported patients are automatically registered!

Patient goes (Patient menu)

By clicking on the Patient Goes button, the patient currently logged into DBSWIN is logged out and all data fields are emptied.

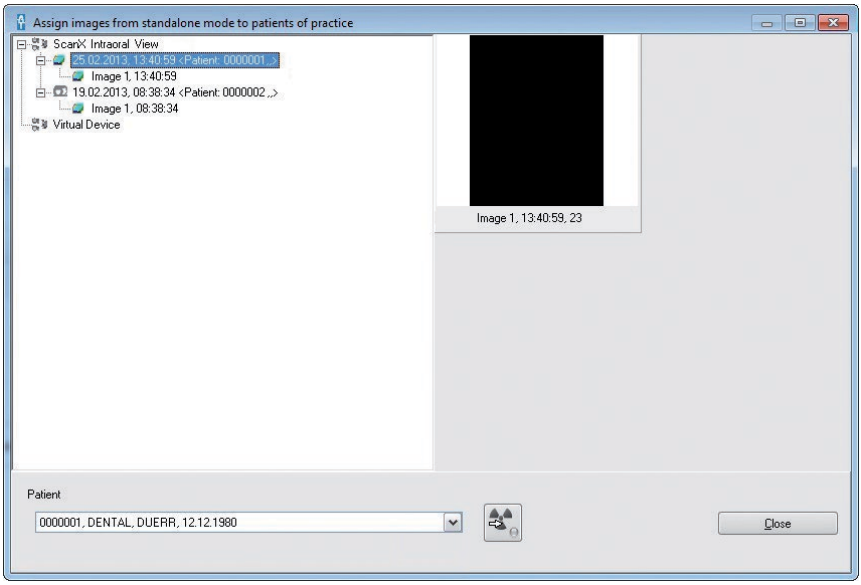
Attributing images made under Stand-Alone operation to office patients

By clicking the button X-ray images made using a connected scanner operating as Stand-Alone can be filed under DBSWIN.

Transmit images to DBSWIN

Using this button, the selected images are taken from the scanner and transmitted to DBSWIN.

In order to simplify the attribution of images to patient, before scanning the image plates enter the patient ID into the scanner.



Select the required scanner from those listed. The list of scanned images taken is shown. Where the selected image has already been attributed to a patient in DBSWIN, this will be displayed in the patient field. If the selected image cannot be attributed to a patient, the respective patient can be searched for a new patient entry made. Click the button to accept an image. The images are accepted by DBSWIN and displayed in the X-ray module, where they can be edited and then saved.

Save patient or changes (Patient menu)

Saves the current changes to patient record.

Create new patient (Patient menu)

Click on the Create New Patient button in the Patient view to create a new patient. Fill in the fields. Save the patient by clicking the Save Patient or Changes button (index card and disk symbol). The fields for first name, last name, and date of birth are mandatory. If mandatory fields are not filled in or are partially or incorrectly filled in, an information window opens. You also have the option of canceling or discarding the data record by clicking on the Discard Entries button. If a card reader has been connected, feed the insurance card into the reader and click the Create New Patient symbol to enter the patient's records.

Edit patient data (Patient menu)

Click the Edit Patient Data button to change the patient data. Save the changes by clicking the Save Patient button.

Discard entries or changes (Patient menu)

Leaves the processing mode without saving the entries.

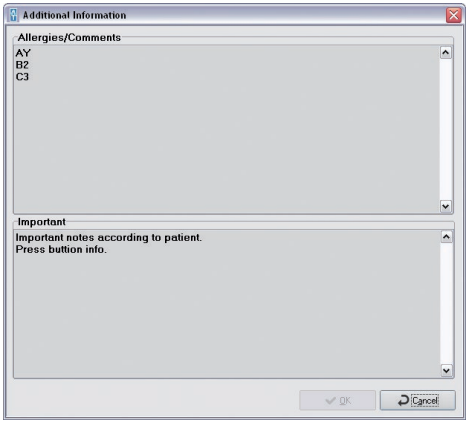
Delete Patient (Patient menu)

In order to delete a patient's records, select the patient from the database and click the Delete Patient button. The patient record thus selected will be deleted from the active database. If images of this patient are available in the database, you need to be aware that you cannot delete the patient during a deletion operation if there are X-ray images or archived recordings that need to be stored. In this case the patient will only be hidden and will not be viewed in the patient select list box. So you can select a hidden patient again, the Display Hidden Patients check box on Configuration/Modules/Patient/Patient tab must be activated. After that all the hidden patients are displayed in the select list box again marked in the additional Hidden column. If a hidden patient is selected, the hidden mark will be reset. The patient is then normally visible!

Display and record information on the patient (Patient menu)

By clicking on the Additional Information about the Patient button additional information such as allergies or remarks can be displayed and recorded or changed for each patient in the processing mode. The content of the first text line (A1) is always shown next to the Supplementary information button, if the Show Additional Information check box in Configuration/Modules/Patient/Patient/ is activated.

Information window



Supplementary information displayed next to the button

Create/delete patient image

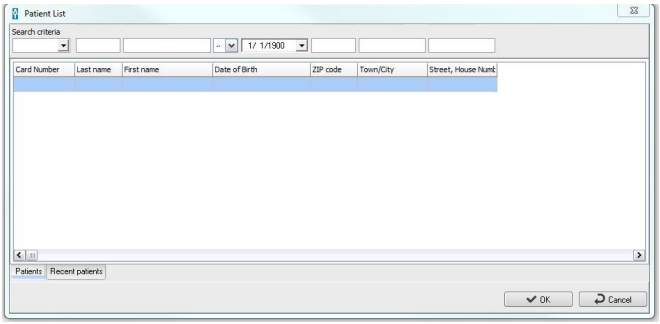
An image can only be created in edit mode. The image can either be taken directly using an available video source or selected and even deleted from an existing image file (BMP, JPEG, TIFF). The data, however, is not saved before clicking the save button on the control bar.

Patient data import

This button lets you accept patient data from other programs, e. g. practice management (settings in Configuration/ Modules/ Patient). Click the red-framed button to import the external patient and the patient will be selected directly where the patient is already stored in the database. If not, the system will be set to Create New Patient mode. If a patient with identical name but different patient ID is already stored, the system switches to Edit Patient mode. Here you have to click the Save Patient or Changes button to save the changes in the database.

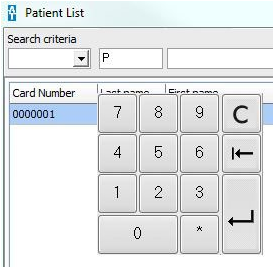
Search Patient

In order to find a patient in the database, click the appropriate index alphabet field for the patient.



Now with all patients with this initial letter are displayed in the patient list. Move the cursor down the list to select the correct patient. If the list contains several entries, you can enter or select further parts of the name in the Search criteria area or other criteria in the corresponding fields, thus narrowing down the search results. The list of patients is automatically adapted to the search criteria. You can also select the patient ID as a search criterion to enable the patient selection via the number you assigned. Enter the number directly or click on the Calculator symbol in the Patient ID search field to use the calculator.

Attention: Patient ID is a character string with a maximum of 15 digits, which is evaluated from left to right! For example: Search string 001T-A0 gives a list of results 001T-A0* where * indicates any character!



It is also possible to enter the patient name in the Family name field or enter the patient ID number in the field of the same name in the patient overview. Select a patient from the list by clicking on the entry with the left mouse key and confirm with OK.
You can swap simply between registered patients via the Last Registered Patients tab.

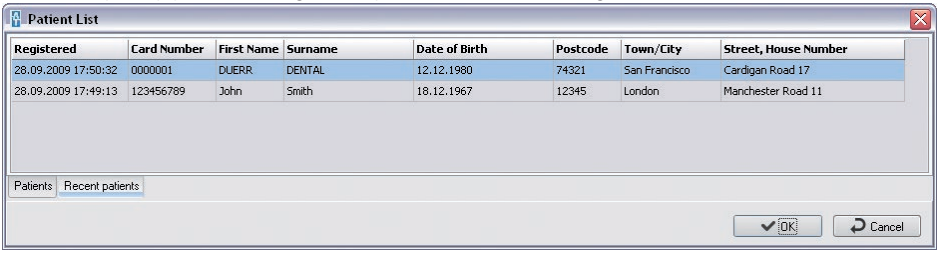


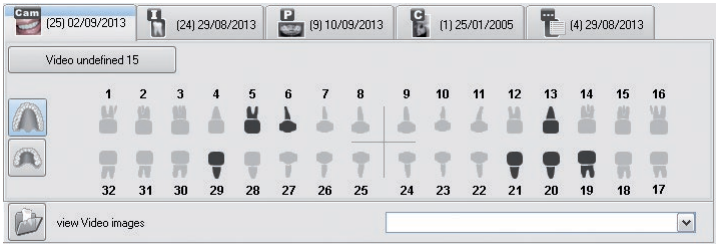
Image Overview

On the index card you can see the Image Overview operating panel, which, in addition to the visualization of existing images of the current patient, also enables you to swiftly retrieve images of specific teeth or of a specific image type for viewing on the light table. On top of the tabs the number of existing images is indicated next to the symbol for the image type as well as the date of the last recording. Selection of one of these tabs leads to highlighting of one page. The number of undefined images of the current image type is displayed. Existing tooth images are displayed in that the appropriate tooth is highlighted.

Display Images

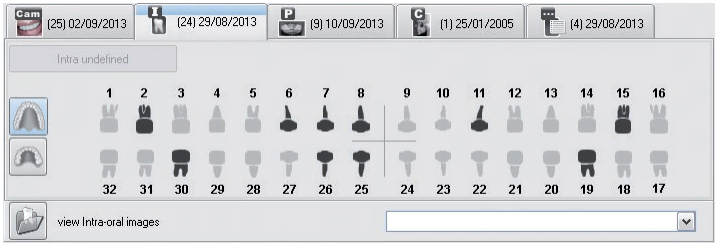
Every page of the image overview has a key, which facilitates switching to the light table from where all images of this type (all video images, all intraoral images or all extraoral images) can be displayed on the image clipboard of the image select box. The push-button is only available when images of the patient of this image type are available. You can click X-ray Undefined or Video Undefined to swap to the light table. All undefined images of the current image type (video, X-ray) are displayed on the image clipboard of the image selection box for selection. This field is only available where images of the current patient and current image type are actually available. Furthermore, the pages for video and intraoral images each contain a tooth plan where teeth for which there is an available image are highlighted. Further image types will be displayed in an options list where available. The options list is only released if corresponding image object types are available from patient recordings. On the page for extraoral images all stored images are displayed in three options lists. A click on the tooth or on an options list item switches to the light table and all images of this image object type are displayed on the image clipboard of the image selection box.

Video Images



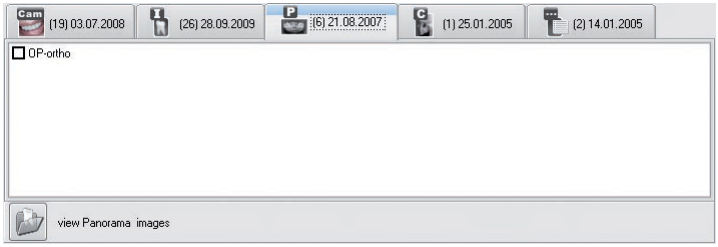
On this page a plan of the teeth of all single video images of the patient. Where images are present, teeth have been highlighted in color.

Intraoral Images



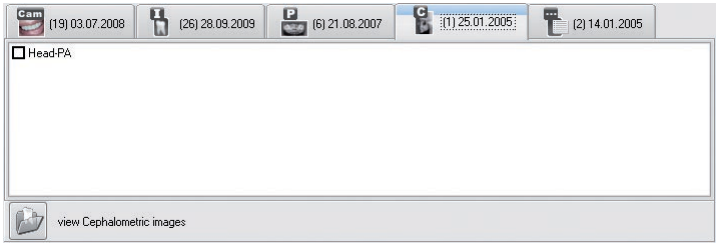
On this page a plan of the teeth of all intraoral images of the patient. Where images are present, teeth have been highlighted in color.

Panorama images



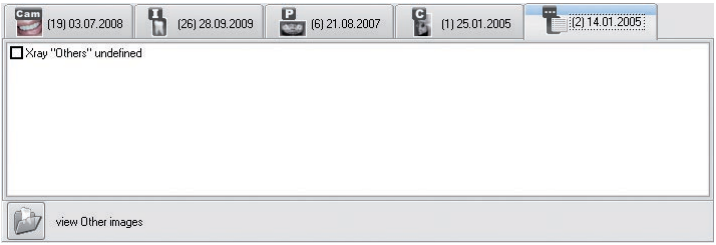
All available extraoral X-ray images except undefined images are displayed in three selection boxes.

Far X-ray images



All available extraoral X-ray images except undefined images are displayed in the selection boxes.

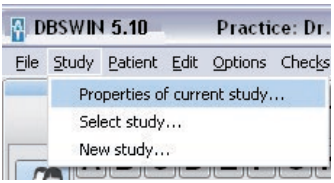
Other X-ray images



All other images are displayed here.

Properties of an examination (Examinations menu)

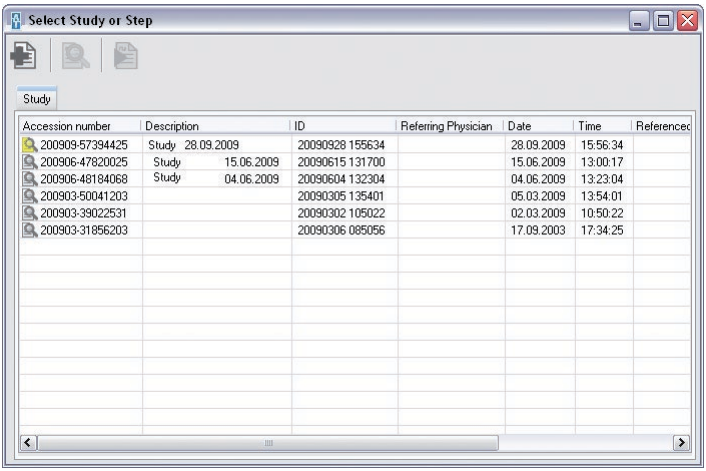
The images and views for a patient that were created on a specific day for a specific purpose or in the frame of a specific order/diagnosis are summarized in a examination. The examination of the registered patient created last on the current day is always active. The examination menu can be used to open the current examination data, swap between the examinations that are available for a patient and create a new examination.
This function is mostly used in conjunction with DICOM (see DBSWIN DICOM Manual, No. E7204). If necessary, you must order and release DICOM via the central release.



Click on Properties of the Current Examination.... The Examination window appears with the corresponding information.

Swap examination (Examination menu)

This function can be used to swap other examinations to the registered patient. The symbol with the magnifying glass appears In the status line if several examinations are available for a patient. The process number appears next to the symbol.
Click on Swap Examination ... in the Examination menu or on the symbol in the status line.
The window for selecting a examination appears.



Select examination

Click on a examination in the list with the left mouse key and then on the Select Examination/Work Step symbol. The marked examination is loaded.

Display details of examination

Click on a examination in the list with the left mouse key and then on the Detailed View symbol. The detailed information on the examination is displayed in the Examination window.

Create new examination (Examination menu)

This function can also be used to explicitly specify a number of examinations on one day to a patient. You can separate images for different orders/diagnoses better like this.
Click on the Create new examination symbol with the left mouse key. The Examination window for entering the data appears. Some ID data are already available, but can be manually adapted.

5. Light table

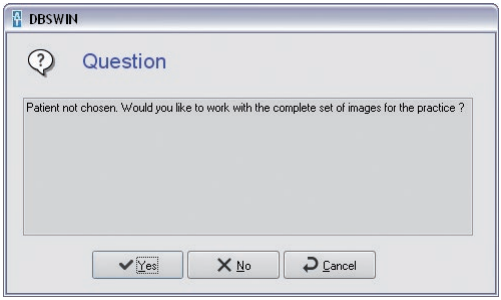
5.1 General

The light table allows free arrangement of images selected. You have the possibility to choose between a preset order, to arrange images as required, to move, to enlarge and to process them.

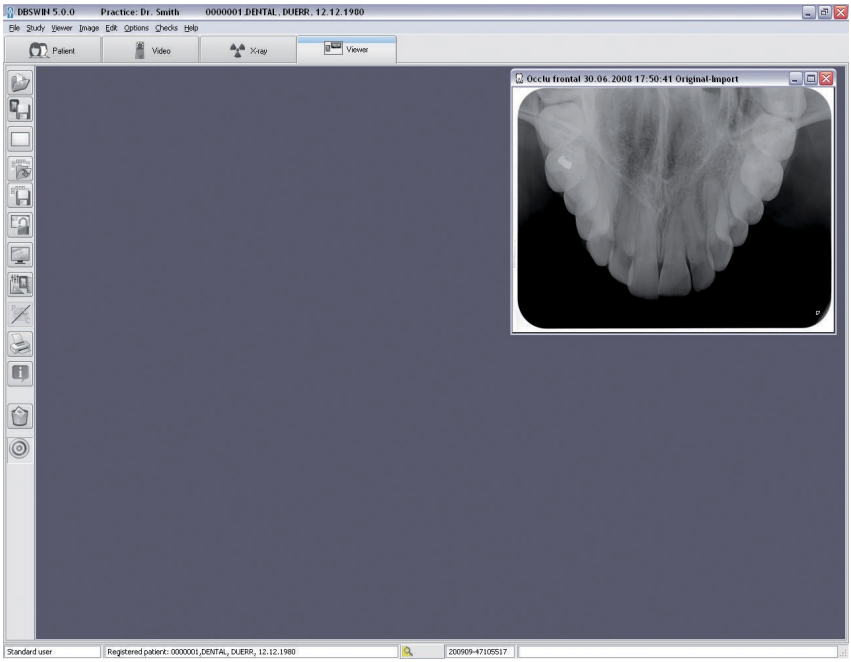
5.2 Global image search

When transferring from the Patient mode to the light table and no patient name has been selected, then it is possible to work with the complete image archive. For example, to find a particular image.

NOTICE
Note that this process can take a longer period of time if all the office images are to be displayed in the Image selection box.



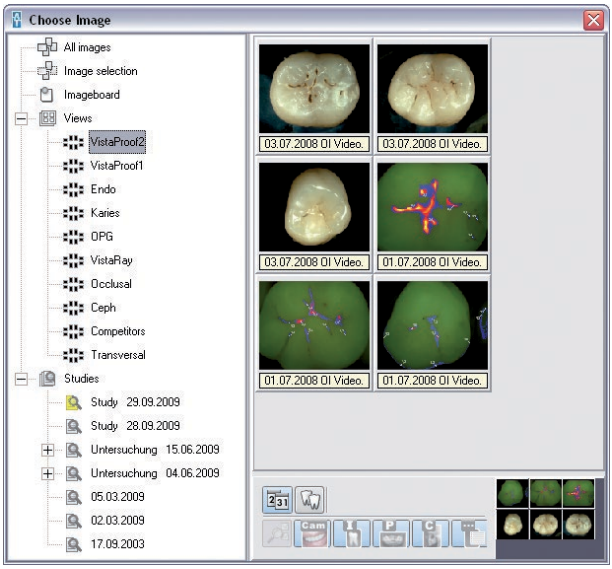
View



5.3 Functions

Load an image (Light table menu)

To load an image from the database onto the light table, click the Open image selection box button. The image selection box is opened.
In the image selection box you can see the images assigned to the patient that are summarized into views or into examinations. The active examination is marked in color.
When selecting a view, a preview of the images appears in the lower right corner of the image selection box and of the layout where these are arranged.



When an image in the box is double clicked with the left mouse key, it will be displayed in full size on the light table.

You now have the possibility of loading several images side-by-side onto the light table. To do this, click on the desired image in the image selection box and keep the mouse key pressed. Drag the image using the mouse onto the light table. The selection box is closed and you can drop the image in freehand mode at any place on the light table. In Fixed Mode you can drop the image only in an existing image frame.

If no empty image frames are open on the light table, load a mask. After removing an image the image selection box reappears and a new image can be opened. Images can only be opened once. This is shown by the image information line that has a colored background.

You can also open a whole view or a complete examination (that contains several images) on the light table. To do this, click on the symbol of the desired view/examination and keep the mouse key pressed. Drag the mouse cursor onto the light table and let go of the mouse key. All images of the view/examination are now opened on the light table.

In a view the images are arranged in the layout that was saved with the view. In a examination the images are arranged tiled beginning from top left.

Load image status (Image menu)

If several views of an image are available, the list in the Load Image Status submenu is expanded. You can also load a certain image status that exists for a examination, for example, from the list except for Original, Initial saving, Diagnostic Status and Last Saved.

Save image (Image menu)

Saves the active image, or its changes, to the archive.

Clear Light Table (Light Table menu)

Clears the light table (all images and frames are removed).

Fixed mode (Light Table menu)

Activates the Fixed Mode by clicking the Changeover between Fixed and Freehand mode button. The current mode is displayed in the status bar and indicated by the symbol. The image frames cannot be dragged in Fixed Mode.
Drag&Drop can be used to move images between image frames. Move an image from its frame to a new frame that is occupied and release, the two images will switch places.

Freehand Mode (Light Table menu)

Activate the Freehand Mode by clicking the Changeover between Fixed and Freehand Mode button. The current mode is displayed in the status bar and indicated by the symbol. The image frames can be moved as desired on the light table in the freehand mode.

Full screen

Shows current image without additional elements as Full Frame Groups.

View

Individual images of a patient can be summarized into views to summarize, for example, the important recordings of a session or series of sessions.

Save view (Light table menu)

If the current image arrangement is to be saved on the light table, select the Save View As command from the Light table menu. The save view/mask dialog appears. You will now be asked to assign a name to the new group. Information concerning the group can be entered in the window below. Then click Save. A saved view can be loaded, changed and saved under the same or another name.

You can specify in each case whether View and Images or only the View are/is saved when saving.

Save View and Images: All changed images are also saved, i.e. the Last Saved image status is updated.

Save View Only: The image changes are only saved in the view, i.e. the Last Saved image status is not updated.

Prompt Each Time: At each save a dialog appears with the prompt of whether the save should be carried out with or without image changes.

Load view (Light table menu)

To load a view, select Load/View in the Light table menu. The load menu with the available groups will be opened and the required group can be selected from the list. Place the mouse cursor over the name of the group to be opened and click the left mouse key, then click Load Masks/Group.

Delete view (Light table menu)

To delete a view, select Delete/View in the Light Table menu. A list of available views opens and you can select the view you require from the list. To do this, position the mouse cursor on the name of the view in the list, click the left mouse key and then on Delete.

Masks

A number of different masks (empty frames) can be organized on the light table simultaneously. Standard image arrangements, for example, can be quickly created in this way without having to sort the images on the light table.

NOTICE
Images that are within the image frames will not be saved! These masks are independent of the patient and are always available.

Save a Mask (Light Table menu)

To produce a new Mask, arrange the images in the desired sequence on the light table. Select from the light table menu the option Save as Mask. You will now be asked to assign a name to the new mask. Then click Save.
When saving, only the image frames without images are saved. If you want to automatically load defined object recordings when loading the mask in the corresponding image frames (e. g. semi status), these image frames must then be assigned before saving the object type numbers. This can be achieved by copying an available intraoral image tooth 14 (object type number) and then using paste. The imported image must now be assigned the required object type by using the Image info function. This process must be repeated for all the desired objects in the semi-status. After saving under an appropriate name this layout will be available for the automatic loading of all the newest, matching images.

Load Mask (Light Table menu)

For loading a mask, select from the light table menu the option Load Mask. The load menu with the available masks will be opened and the required mask can be selected from the list. Place the mouse cursor over the name of the mask to be opened and click the left mouse key, then click Load.

NOTICE
If you want the mask to automatically select the latest matching images, mark the appropriate option field Load Newest Images.

Delete a mask (Light table menu)

To delete a mask, select the Light Table/Delete/Mask option in the menu. A list with the available masks will be opened and the required mask can be selected from the list. Place the mouse cursor over the mask name in the list and push the left mouse button. Then click the delete field.

Image processing (Image menu)

You can edit an activated image by clicking on the Edit Active Image button or by double clicking on the image. Please read the Image Processing section for information on the relevant functions.

Caries/Prophylaxis filter

This button is used to switch between the prophylaxis mode CamX cameras and the caries mode used by CamX Spectra. For more information, applications, and analysis, see the installation and operating instructions for the specific device. The currently active view can be identified from the symbol:

P: Camera is in prophylaxis mode

C: Camera is in caries mode

Print (Light Table, Image menu)

This option in the light table menu allows an image or number of images on the light table to be printed. For further information, read the Printing chapter in the handbook or the Help.

Image information (Image menu)

To enter, edit or display information on the active image, click the Image Information on Active Image button. This displays the image information box for the current image. On the Indication/Comment page you can see information on the indication and you can enter text information on the image. The texts of the shortcut keys can be copied to the text area with the right mouse key. The first comment can only be entered once and cannot be changed after saving.

The Image info page displays image type, image size, object type (e. g. tooth number) and object area (e. g. tooth area). By clicking the Select button in the Type area in the center of the screen, you can select the tooth number of the main object, for example, and confirm your selection with OK. Entering the object range now displays the previously selected main object with a blue background and you can continue to mark teeth that are within the area of the image. All selected objects are displayed as text in the Area field; related objects within a quadrant are displayed with a hyphen between the first and last object (e.g. 12, 13, 14 -> 12-14).

The production details of the image are displayed on the Details page. In addition, the user responsible for the image is also listed.

The X-ray page displays the values entered so far; these values can be edited. Information on the image file is given on the Image Status page.

Delete an Image (Image menu)

An image can only be deleted if it has not yet been archived in the DBSWIN long-term archive and is not subject to any statutory retention time (e. g. X-ray images)! DBSWIN inquires at each image whether the image should be hidden only. This means that the image is no longer displayed in the image selection box until the Display Hidden Images check box is set in the Configuration/Modules/Light Table. As soon as the picture is loaded on the light table the picture is hidden, but it is always indicated in the image selection box.

Drop Surface

If one or more images have been dragged to this area using Drag&Drop, the following functions for the image or images are displayed in a list.

- Export
- Send email
- Copy to image clipboard of image selection box

NOTICE

In order to send emails an SMAPI Client (e. g. Outlook Express) must be installed!

Activate an Image

A simple left mouse click activates the corresponding image (the color of the image bar changes to blue).

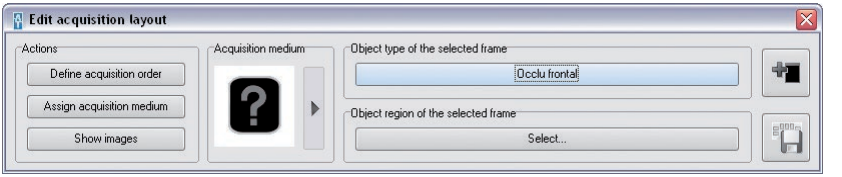
Import (File menu)

This menu function allows images to be imported. After selecting this menu function, a window drops down which allows you to select the appropriate image file. Then click the Open menu. The image is now depicted on the light table and can be processed. To save the image to the database, click the Save Active Image symbol. You must now assign an image type to the imported file; otherwise, the image cannot be saved.

Load catalog (Light table menu)

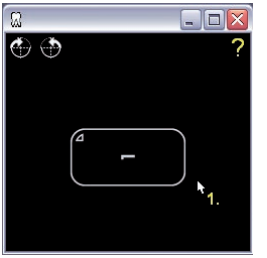
In a catalog you can summarize and open several patient-spanning images. This can provide you with a good overview of treatment successes, for example, or specific topics.

Creating/Editing recording scheme (Light table menu)
This function can be used to create masks that are then available via the Load View/Mask menu on the Masks tab or in the Record Image menu for the creation of series recordings.

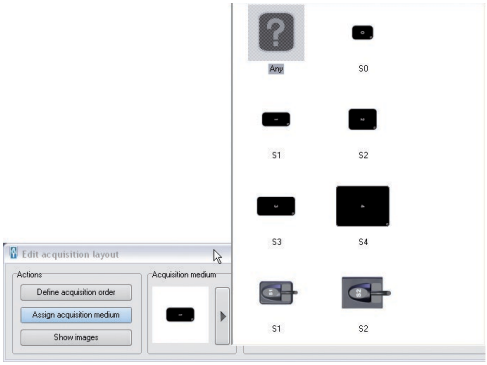


Add new frame

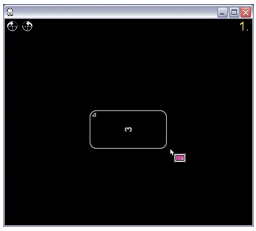
Clicking on the Add New Frame button creates a new frame on the light table that can then be assigned a position in the sequence, a recording medium and an object area.
If you want to arrange the image frame in a certain sequence, click on the Specify Sequence button in the Actions area. A question mark appears in the top right corner of the image frame. The mouse cursor is extended by the numeral 1. that you drag into an existing image frame and can assign with a click of the mouse.



The numeral 2. then appears at the mouse cursor that you then assign to the next image frame until all image frame are numbered. If you want to allocate a certain medium (sensor, image plate) to the image frame, click on the button with the arrow symbol in the Recording Medium area. You can select a medium in the pop-up field by clicking with the mouse.



The mouse cursor is extended by the symbol that you then drag into an existing image frame and can assign with a click of the mouse.

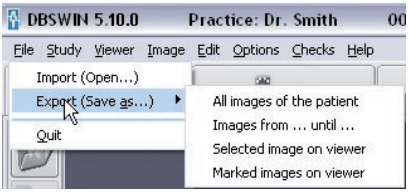


Save recording scheme

You can save the recording scheme you created.

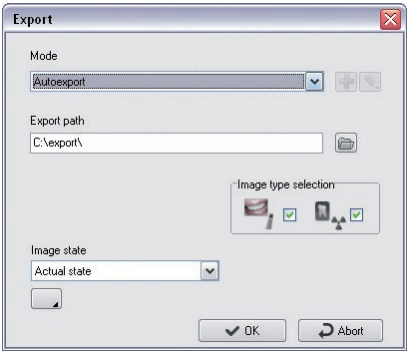
Export (File menu)

This function allows images in various formats to be exported, e.g. to process these further or to make them available to others.



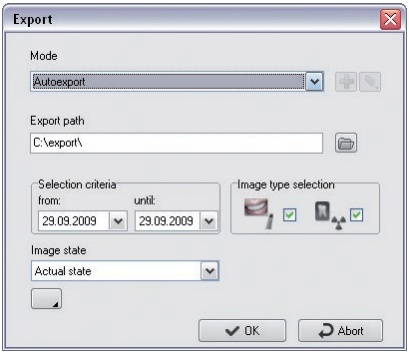
You can either confirm an available export mode (setting under Configuration/Modules/Light Table) from the list and select or confirm the directory where it is to be sent. If you want to use a different mode than that proposed in the predefined Image status for export, this can be selected from the options list under Image status. Detailed information concerning the image formats can be found under Configuration/Modules/Light Table/Export-Email. Further selection criteria are partly explained in the following section.

5.4 Export functions

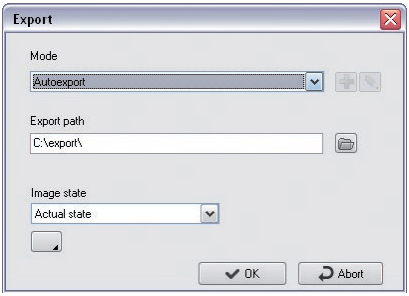


All images of the patient
Image Type Selection: Selection for video and X-ray images
Image Status: Image status of the exported image

: Activate extended function view! Only visible for users with administrator rights.



Images from ... to ...
Selection Criteria: Selection of the period of the images to be exported



Selected image on viewer
- Only the active image (blue image bar) is exported!

Marked images on the light table
- All images marked with a red tick are exported (Ctrl + left click)

Users with administrator rights have the ability to change all the parameters for the current image export using the further options.
Any changes made to the current mode will not be stored. This can only be done under Configuration/ Modules/Light Table/Export-Email!

Image status

All five image statuses, Original, First Saved File, Diagnosis, Last Saved, and Current Status, can be exported.
All visible colored graphic elements presented in the image on the light table will be added to the exported image (burned-in) as grayscale!
The Toolbox supports the following four drawing levels whose graphic elements can be made visible or invisible either individually (On check box) or all together (All check box):

Angle measurements

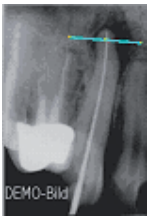
Length measurements of lines and polygons

Density along a line or polygon

Text, line and closed line elements

Examples of images exported under varying image status

Not visible = drawing level is not visible or no graphic element is present
Not possible = image status does not support drawing level

Display	Original status	Initial save	Diagnosis	Last stored image	Current status
	Not possible	Not visible	Not visible	Not visible	Not visible
	Not possible	Not visible	Not visible	Not visible	Visible
	Not possible	Not visible	Not visible	Visible	Not visible
	Not possible	Not visible	Visible	Not visible	Visible
Light table image					
export. Image					

Duplicate an Image (Image menu)

Creates a duplicate of the active image on the light table.

Assign an image (Image menu)

Opens the Patient List so that an image can be assigned to another patient who is listed in the patient directory. Archived images can no longer be reassigned!

Arrange (Light table menu)

Automatic sorting of all images which are on the light table at the moment.

Align to grid

Aligns the images to the defined pixel grid of the light table.

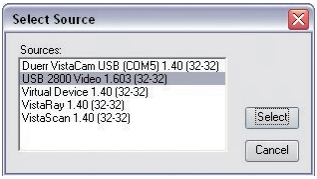
Fixed mode

Changes over the arrangement of the images to fixed mode.

Imaging (Image menu)

The active image is transferred to an external image-editing program as a call-up parameter. The external image-editing program available must be entered in Configuration/Modules /Light Table/Imaging. After closing the imaging program, the altered image will be displayed on the light table and can be stored as a duplicate!

Select source (Light table menu)



Select the unit that you want to use to scan an image under this menu item.

Scanning (Light table menu)

This menu item enables you to accept images from a TWAIN source (e. g. scanner). After the selection of a source via the Select Light Table/Source menu item and selection of this menu item, the DBSWIN-SCAN window opens in which you can select the TWAIN source and activate the image capture.
The number of images taken is shown. After closing the DBSWIN-SCAN window these images are displayed one after the other on the light table.
To store the image in the database, click the Save Active Image push-button (disk and tooth symbol). You must now assign an image type to the imported file; otherwise, the image cannot be saved.

Marking images

Mark image with red tick: Ctrl key and mouse click in the image area.
The image to be marked in this way can be in the Image selection box or on the light table. If an image is marked from the light table, then the thumb image in the Image selection box will also be marked and vice versa. Several images can be marked at once.
An image or all marked images of the image selection box or of the light table can then be saved, saved as a view, deleted, exported, sent per email or copied to the image clipboard of the image selection box.
The functions for marked images: Save, Save as group, Delete, Export, Send per email and Copy to the image clipboard of the image selection box are available per:

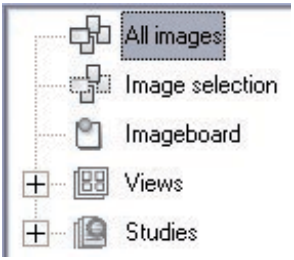
- Ctrl key + Drag&Drop
- Context Menu/All selected
- Main Menu/Light table/Mark All

Image selection box

You can freely scale the size of the image selection box by pulling with the mouse on the edges or corners of the box.
The image selection box can be updated in the context menu with Update (right click). This means that those images, which may have been taken at other stations in the meantime, are also displayed. The image selection box is displayed by clicking the Open Image Selection Box button. The image selection box enables you to choose the required image from those saved for displaying on the light table.

Display bar

Here you can swap between the display of all images, the images on the image clipboard and the saved image views or examinations of the patient.



The image clipboard serves to store selected images temporarily. If images are transferred to the light table (e. g. by the patient, video or X-ray module), these are then saved as a copy on the image clipboard. This allows immediate access to the images. It is also possible to copy a particular image from the image selection box or from the light table onto the image clipboard. The current content is deleted as soon as new images are copied into the image clipboard.

Buttons of existing views are displayed under the Image Clipboard button. A view can be loaded onto the light table per Drag&Drop. The images of the view are displayed in the image selection box by clicking on the desired button.

Sorting of images by date/object type

The images can be sorted in the image selection box according to date of creation or to object type. Within the sorting according to object type images are also sorted according to date of creation.
You can display particular images only by using a filter on the stored images. This is especially recommended when a large number of images of a patient are available.

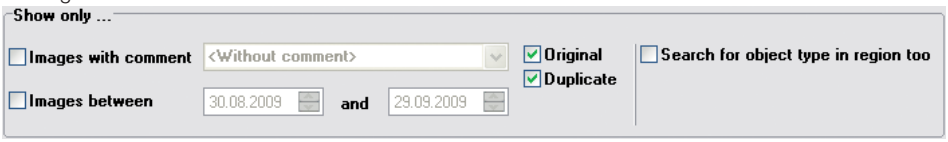
Global image selection filter

You can show or hide the desired image types by clicking the Intraoral Images (image number 1), Extraoral Images (image number 2) or Video Images (image number 3) buttons.

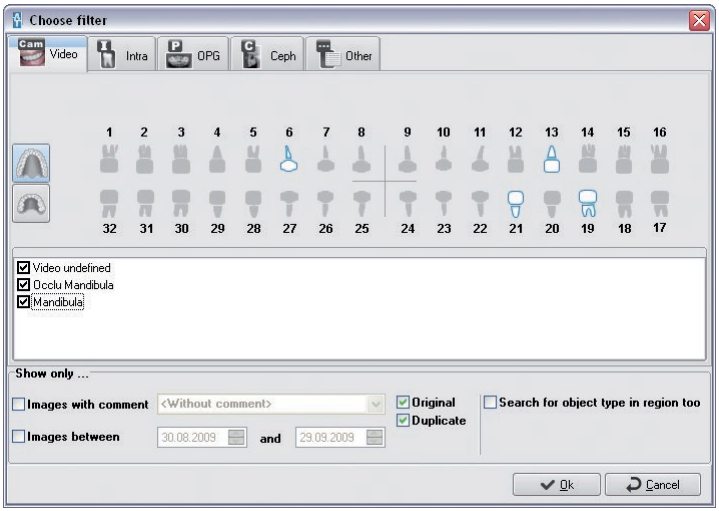
Advanced image selection filter

After clicking the Filter Selection button, the advanced filter selection box is displayed for all image types. Teeth to which an image already exists are highlighted in color in the tooth overview. Clicking the cursor over the relevant tooth loads the appropriate image. You can make separate selections for the three areas Video, Intra, OPG and Ceph so that only the desired images from the available recordings are displayed in the image selection box. Recordings of the Panorama (OPG), Remote X-ray (Ceph) and Other types can be displayed by marking the corresponding check box.

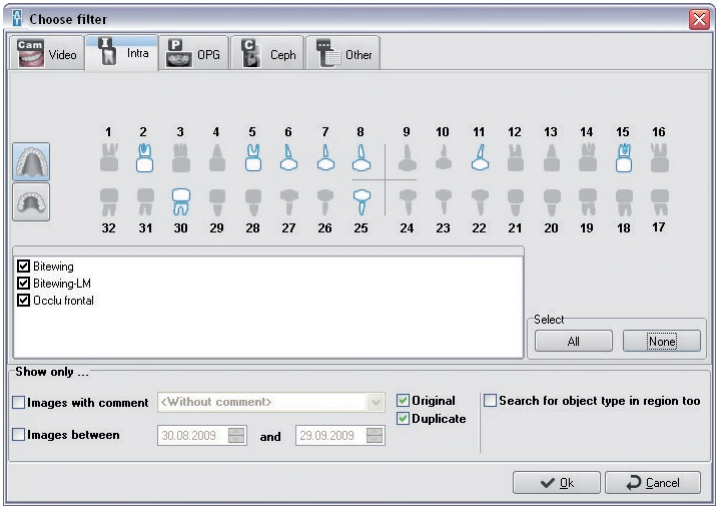
Additional selection criteria for filtering the display of images can be entered and activated for all types of image.



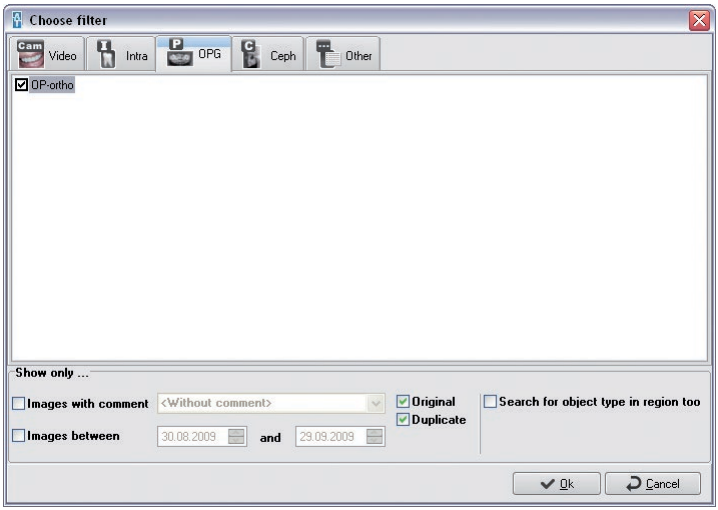
VIDEO filter settings



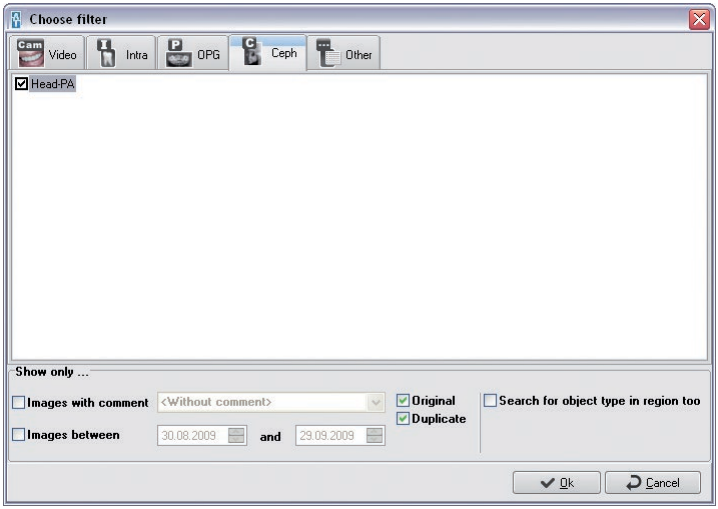
INTRA filter settings



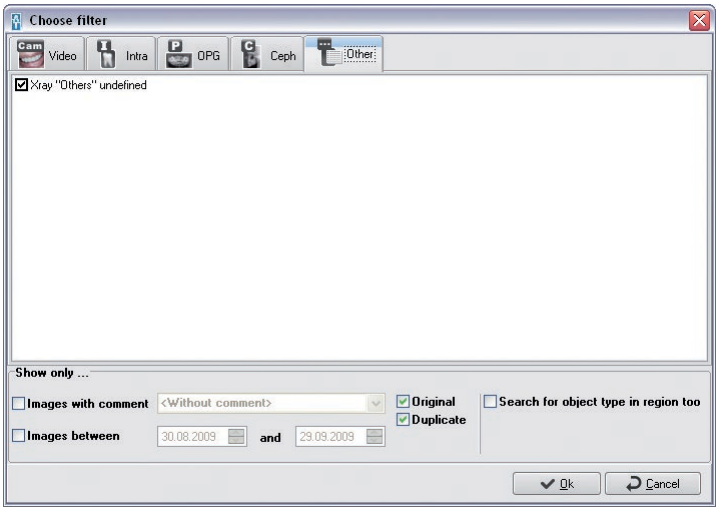
OPG filter settings



Ceph filter settings



Other filter settings

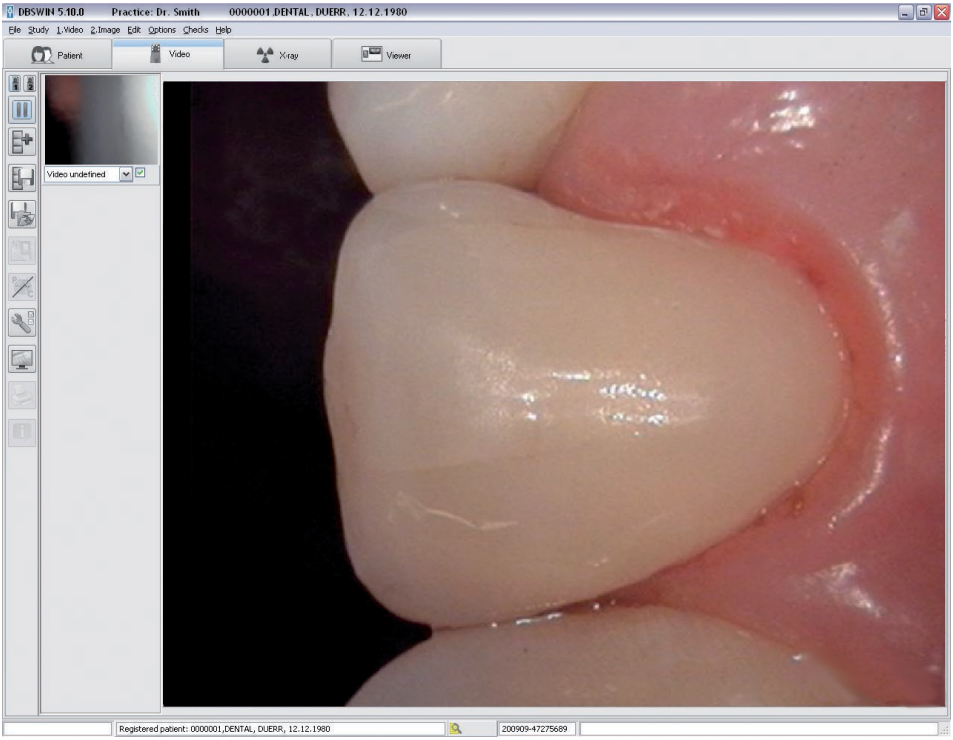


6. Video

6.1 General

The Video module allows you to make images as well as to edit and to save the images recorded. The current image from your video sequence is displayed. Individual images or image sequences can be transferred to the light table for viewing and editing.

View



6.2 Functions

Select video source

To select one of the two video sources, please click one of the buttons.
Precondition for the selection is that two cameras have been connected and configured in the Video module.

Still Image (Video menu)

To obtain a still image of the selected video source, please click the Live/Still Camera Image button. The image will now be frozen and various options can be selected, you can click the Record Image menu window and transfer the image to the image strip, enlarge to full frame by selecting Video Full Screen or print by selecting Print Active Image. Clicking the Live/Still Camera Image menu option brings you back to the live image screen.

: Record image/video

This button activates/deactivates video recording mode. The video is placed into image strips and marked for saving.

: Video recording mode activated

: Video recording mode deactivated

: Start video recording

: Stop video recording

Live Image (Video menu)

In the Live Image mode you can view live recordings of your video source. You can hide the control elements and change to full screen mode by clicking the Video Full Screen button.

Image Recording (Video menu)

In order to record an image displayed on the monitor, click the Image Record button. The image is now placed into image strips and is already marked for saving. Repeat for further recordings.

Save Images (Video menu)

Only those images marked will be saved in the database. Before saving images for the patient currently selected, you should make sure that the correct object type (tooth number or recording type) has been selected.

Save and open on the light table (Video menu)

Only those images marked will be saved to the database and transferred to the light table. There they will appear initially on the image clipboard of the image selection box. Before you save images for the patient currently selected, you should make sure that the object type (tooth number or recording type) has been correctly assigned.

Image processing (Image menu)

You can edit the active image further by carrying out one of the following actions; click the Image Processing menu window in the editing tools list, double click anywhere within the borders of the image or click the right hand mouse key while the cursor is within the image which will open the editing functions. Please refer to the Image Processing chapter in the manual or the online help for a detailed description of these functions.

Brightness / Contrast

If you click on the Video Color Control button in the live image view, a menu appears where you can make the video settings and select a profile.
The display of the menu items depends on the connected or installed hardware. Individual menu items may be grayed out (cannot be selected).
Resolution
Video Capture Filter
Video Crossbar
Video Capture Pin
During the installation of a frame grabber card the Service department can select the sources for your frame grabber card here. For further information you are referred to the handbook of the Frame grabber.

Full Screen Mode (Image menu)

You can also display the image in full monitor size in the main window either by clicking on the Video Full Screen button or by pressing the assigned button on the foot switch (if present!). You can change to the normal view by actuating the foot pedal, by making a right hand mouse click and selecting Full Frame from the context menu or by clicking any key. This mode is not supported by all graphic cards! If your Frame grabber does not support this mode, all program elements will be faded out and only the video frame displayed (not full screen).

Print (Print menu)

This function allows you to print the current active image or all the images on the light table. For further information, read the Printing chapter in the handbook or the Help.

Image information (Image menu)

In order to enter information for the active image or to edit or display, click on the Information About Current Image button. This displays the image information box for the current image. The Comment page is available to enter text information on the current image. The texts of the shortcut keys can be copied to the text area with the right mouse key. The first comment can only be entered once and cannot be changed after saving.
Image type, image size, object type (e. g. tooth number) and object area (e. g. tooth area) are displayed on the Image info page. By clicking the Select button in the central window area you can select the tooth number of the Main Object, for example, and confirm your selection with OK. Entering the object field will cause the area of the previously selected Main Object to be displayed with a white background and you can now mark the target teeth in the main image. All objects selected in this way are now displayed as text in the Area field; related objects within a quadrant are displayed with a hyphen between the first and last objects (e. g. 12, 13, 14 -> 12-14).
The production details to the image are displayed on the Details page. In addition, the user responsible for the image is also listed.

Caries/Prophylaxis filter (Image menu)

This button is used to switch between the prophylaxis mode CamX cameras and the caries mode used by CamX Spectra. For more information, applications, and analysis, see the installation and operating instructions for the specific device. The currently active view can be identified from the symbol:

P: Camera is in prophylaxis mode

C: Camera is in caries mode

Activate image of image strip (Video menu)

Click on an image in the image strip to display it in the main window. You can activate the previous image by choosing the Next Image menu option in the Video menu.

Mark image to be stored

There is a check box below the bottom border of the images that are displayed in the image strip. Clicking on this field allows the image to be selected or deselected for storing purposes.

NOTICE
Only images that are checked are saved or transferred to the light table.

Assigning images

The images in the image strip can be labeled with appropriate information (such as object type, tooth number and type of image). To open information on the object type, either click on the pull-down menu at the lower edge of the border of the desired image in the image strip and select the required item from the list or select the Information About Current Image button.

7. X-rays

General

The intraoral X-ray recording systems ScanX, SensorX and ProVecta enable X-ray images to be created / digitalized and saved. Every X-ray image is assigned to the patient currently selected. All X-ray images are stored as the original data and are not modified by DBSWIN. If X-ray images are edited with the image processing functions, this does not affect the original image. Information is simply added and can be undone any time as desired. If you have assigned an X-ray image to the wrong patient, you can always assign it to the correct patient. This can be carried out at the following two places:
In the X-ray module before saving under menu item 2. Image/Save under Another Patient
In the light table under the Reassign Image menu item. The original data is then supplemented by the data of the person who carries out this action and the original patient.

Measurement of X-ray images

In order to estimate lengths and angles in X-ray images, the image must be calibrated with the aid of a reference image object. Despite calibration, this estimation does not indicate the accuracy of a measurement and must not be used as the measured result. The accuracy depends greatly on the projection distortion of the object on the image detector area. True-to-scale estimation of lengths and angles cannot be carried out in video images!
Panorama X-ray images are not suitable for measuring due to their projection technique.

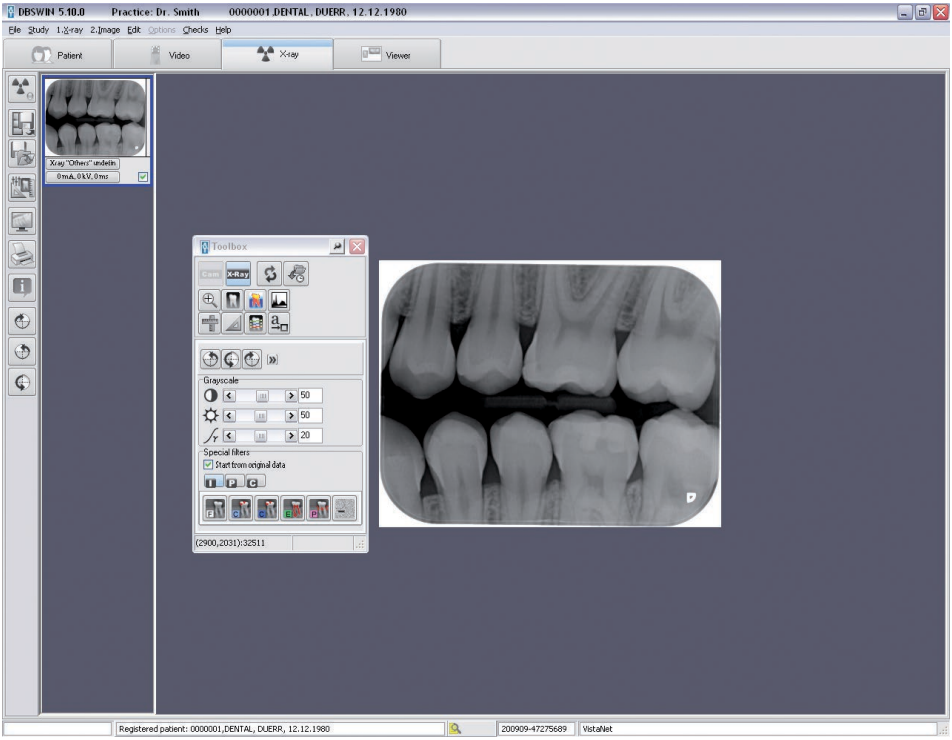
Data backup

As a general rule, you should back up your data regularly. When using the X-ray module (e. g. with ScanX) a regular backup of the DBSWIN database directory is essential! Please read the Data Backup section in the Further Information chapter.

Legal Regulations

Depending on the legal requirements for the dental office, a cyclical constancy test of the X-ray system being used is required in various countries. This includes the X-ray source, the image generator (sensor, image plate with scanner), and the image display (software, diagnostic monitor).
Further information: see Legal Regulations

View



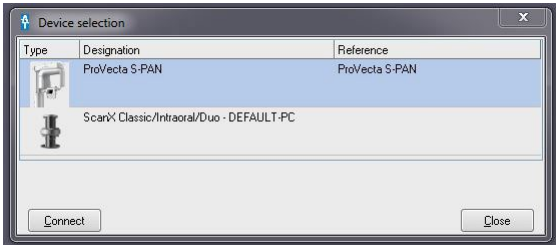
7.1 Functions – Single images using ScanX and SensorX

First the basic functions for the recording of single images are described below. The special functions for the recording of serial images are then described in the Functions – Serial Image Recording chapter.

Take X-ray image (X-ray menu)

The recording of an X-ray image or a series is initiated by clicking on the button Record a New X-ray Image. If several units are activated, the selection window then appears and the desired unit must be selected. If only one system has been activated, this step is omitted!

Device selection



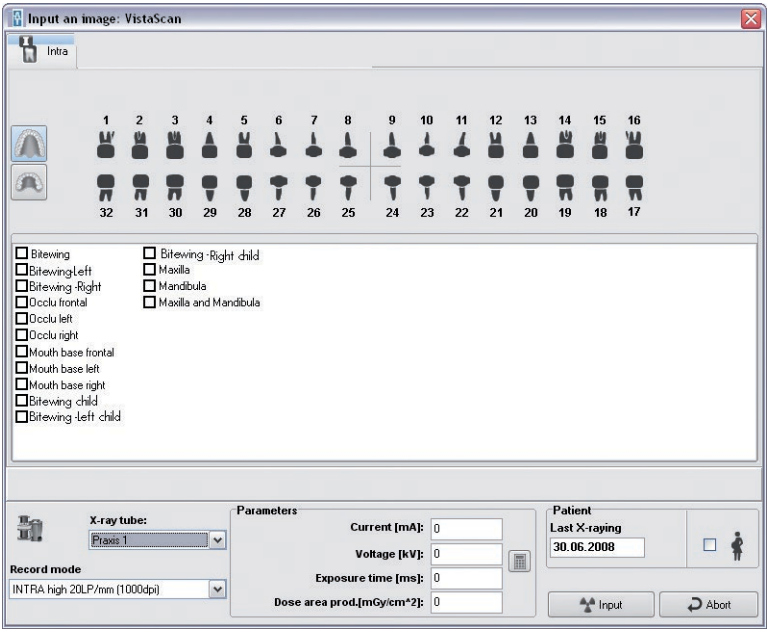
X-ray image configuration

Before an X-ray recording can be carried out, a dialog window appears where the recording parameter can be entered or selected.

Depending on which image types (Intra, OPG, Ceph) the X-ray imaging system can process, the corresponding functions can be accessed (e. g. only Intra image types and no Extra (OPG/Ceph) image types can be selected in SensorX, ScanX and ScanX Intraoral).

The standard recording mode for the selected Intra or Extra X-ray image is displayed and can be changed (the standard mode can be defined in Configuration/Modules/ScanX or SensorX) .

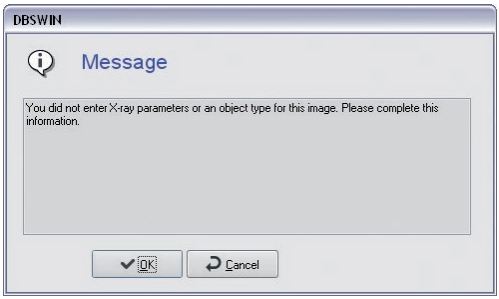
An image (single tooth, bitewing, OPG, etc.) can be selected either before or after actual imaging. The selected recording system (ScanX or SensorX) is displayed (red marking) in the lower left corner of the window.

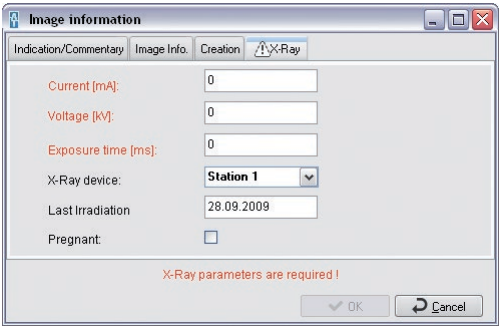


For keeping a complete X-ray report two additional patient-related values (last X-ray and, in the case of female patients, pregnancy) are displayed and may be modified. In the Last X-ray field, DBSWIN automatically shows the date of the last X-ray image taken of the patient in the office. You can update this value!

Compulsory entry of X-ray recording parameters

If the X-ray Parameters are Mandatory check box is marked in the X-ray Images section under Configuration/Office, then the X-ray dose parameters (mA, kV, ms) have to be entered as a minimum requirement. If one or more these parameter fields have not been filled then you will be asked to enter data again before saving. Once the image has been saved, X-ray parameters can only be modified at a later point in time if the check box Editing X-ray Parameters is Always Allowed in the X-ray Images section under Configuration/Office is checked!





Entry of X-ray dose parameters

DBSWIN suggests the dose parameter if a recording saved with the X-ray unit currently selected is available for the selected object (e. g. tooth). If this is the case, the existing values are used as the parameters. Otherwise, DBSWIN uses the standard settings of the selected X-ray unit defined under Configuration/Modules/X-Ray. If you use different recording values for the X-ray unit, these are to be entered manually.
The default setting of common X-ray parameters can be selected for each X-ray unit and each object type (e. g. individual tooth for intraoral devices) under Configuration/Modules/X-ray. Please note that these standard settings can only be modified by users with the appropriate access rights (administrator)!

Read an image

Once you have entered the X-ray parameters, click the Read button and the following dialog is displayed.

ScanX recording window

ScanX goes into image standby mode (the LEDs show green) when the Start Scan button is activated. As soon as the image plate is read by the ScanX, the imaging window displays the current line information and the ScanX sequence. Providing this window is not closed, further image plates can be fed into the system.

Remedying problems

If problems (e. g. image plate is not fully transported out) occur during, before or after the scanning, the scan process can then be ended and a report file created by means of the Error Recovery button (wrench symbol).

You can instruct the unit to run forwards or backwards with the buttons in the Transport area.

In external network devices, e.g. in the ScanX Swift, you can also view and save a report file in the Troubleshooting area.

Automatically repair problems

DBSWIN treats the problems automatically with this function.

Save report

You can save the contents of the window currently displayed by clicking the Save Scanner Report as button (diskette symbol). The standard Save as... Windows menu appears where you can select the storage location and the file name. Three different files can be opened which must then be given different names on saving.

Too much stray light message

When carrying out intraoral imaging all the entry slots of ScanX must be closed using the covers provided! (see Operating Instructions)

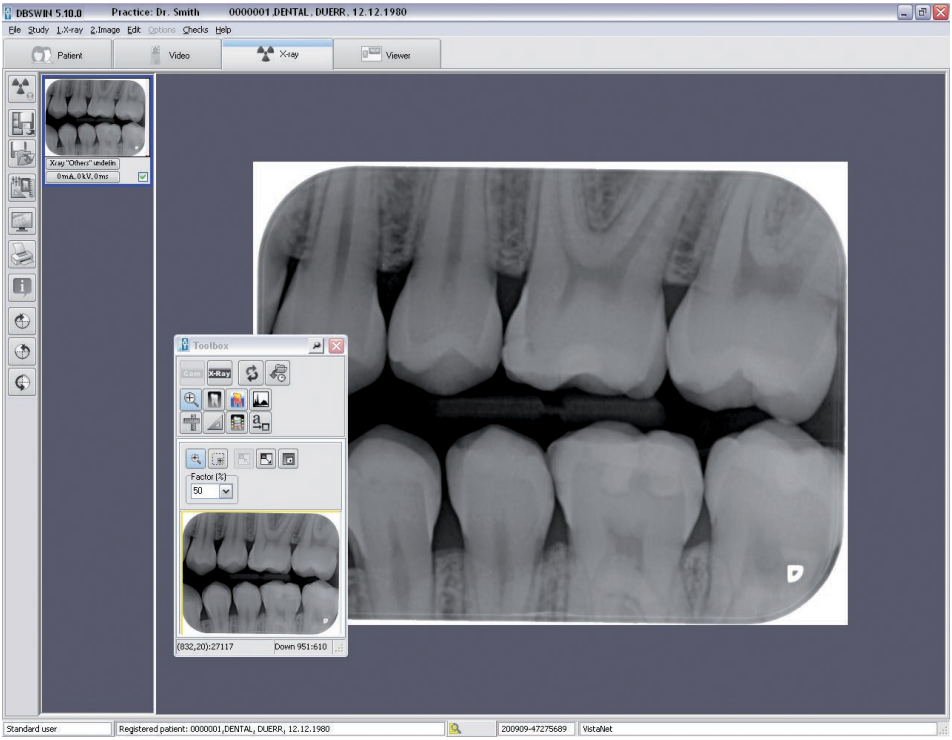
Check operation and set-up of the unit by means of the Installation and Operating Instructions.

Check lighting conditions (≤1000 Lux) at the input area of the scanner and reduce light in the close-up range if necessary.

Message "Exposure from the wrong side"

If this message appears it means that the image plate may have been exposed from the wrong side resulting in a mirror image. Check the orientation and image quality before making a diagnosis. The image can be corrected by mirroring it in the software.

When the imaging window is open, all new X-rays will be displayed in the image strip on the right.

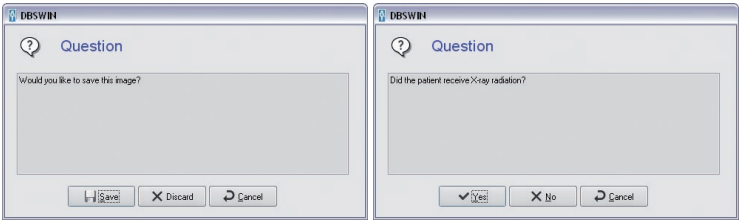


The last image recorded (highlighted in blue in the image strip) will be displayed large in the left hand window and can be analyzed using the image-editing functions. Selecting (click) another image from the strip brings this to the active window.

Save images (X-ray menu)

If you click on this button, all images that are selected and assigned to an object type are stored in the database. Before saving images for the patient currently selected, you should make sure that the cor-

rect object type (tooth number or recording type) has been selected. If you want to discard an image, you must first remove the marking and answer the questions of the dialogs displayed below twice with Discard and No.



If you respond to the prompt of whether the patient has received X-ray radiation with Yes, the X-ray images are stored without exception and marked as hidden!

Save and open on the light table (X-ray menu)

If you click on this button, all images that are selected and assigned to an object type are stored and transferred to the light table for further processing. There they appear on the image clipboard of the image selection box and can be put on the light table using Drag&Drop. Before saving images for the patient currently selected, you should make sure that the correct object type (tooth number or recording type) has been selected.

Image processing (Image menu)

You can process the active image by activating the processing box. To do this, click the Image Processing button, double click in the image area, or single click with the right mouse button within the image to open the context menu and select Image Processing. Please refer to the Image Processing chapter in the manual or the online help for a detailed description of these functions.

Full screen

Click on the Full Screen Display button to display the image in full screen mode. Press the ESC key or open the context menu with the right mouse button and click on full screen to exit the full screen mode.

Print (Print menu)

Click on the Print button to prepare the image for printing. Refer to the Print chapter in the manual or the online help for further information.

Image information (Image menu)

To enter, edit or display information on the active image, click the Image Information on Active Image button. This displays the image information box for the current image. Text information concerning the image can be added to the Comment page. The texts of the shortcut keys can be copied to the text area with the right mouse key. The first comment can only be entered once and cannot be changed after saving.

Image type, image size, object type (e. g. tooth number) and object area (e. g. tooth area) are displayed on the Image info page. You can click the Select button in the Type area in the center of the screen to select the tooth number of the main object, for example. Confirm your selection with OK. Entering the object range now displays the previously selected main object with a blue background and you can

continue to mark teeth that are within the area of the image. All selected objects are displayed as text in the Area field; related objects within a quadrant are displayed with a hyphen between the first and last object (e.g. 12, 13, 14 -> 12-14).

The production details to the image are displayed on the Details page. In addition, the user responsible for the image is also listed. The X-ray parameters page displays the values entered so far; these values may be edited.

Rotate 90° clockwise

The active image is rotated 90° clockwise.

Rotate 90° counter-clockwise

The active image is rotated 90° counter-clockwise.

Rotate 180°

The active image is rotated 180°.

Image activation (X-ray menu)

Click on an image in the image strip to display it in the main window. You can activate the previous image by selecting the Activate Previous Image item in the X-ray menu.

Mark image to be stored

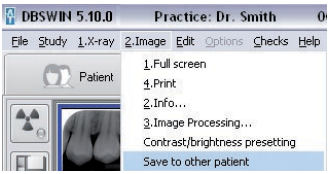
There is a check box below the bottom border of the images that are displayed in the image strip. Clicking on this field allows the image to be selected or deselected for storing purposes. Only images that are checked are saved or transferred to the light table.

Assigning images

Certain X-ray parameters and further image information can be assigned to images in the image strip, such as the X-ray format (Intra, Extra), the type of object (e.g. tooth number or type of exposure). Undefined object types should be assigned to X-ray Undefined! In order to assign the object type either click on the symbol at the lower border of the relevant image within the image strip and then select the chosen type from the list provided, or select the Info symbol. X-ray parameters and further image information can be assigned either by clicking on the symbol at the lower border of the relevant image within the image strip, or by selecting the Info symbol.

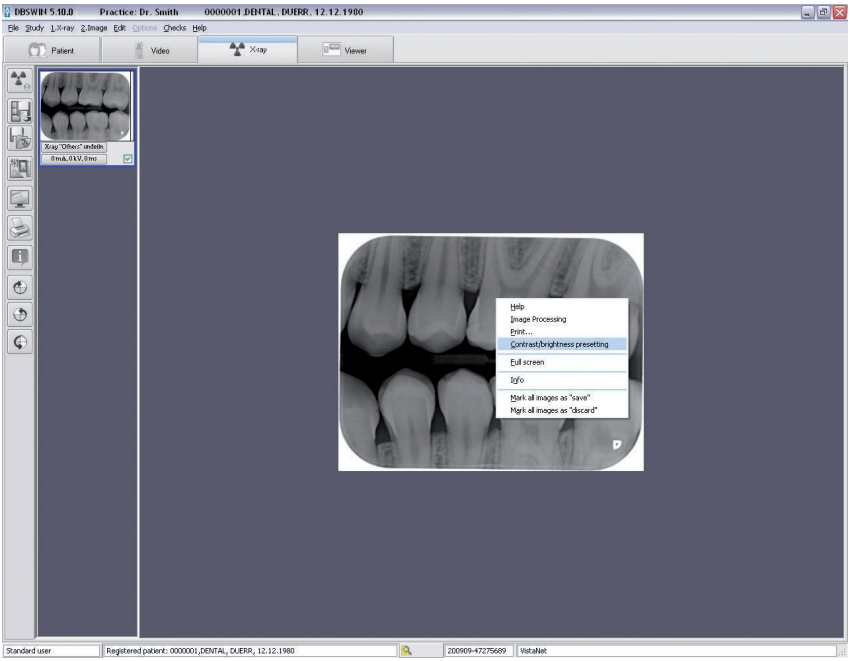
Assign image to a different patient

If an image is not to be assigned to the active patient, the active image can then be assigned to a patient who can be selected from the patient list under Save 2nd Image/Under Other Patient in the menu bar.

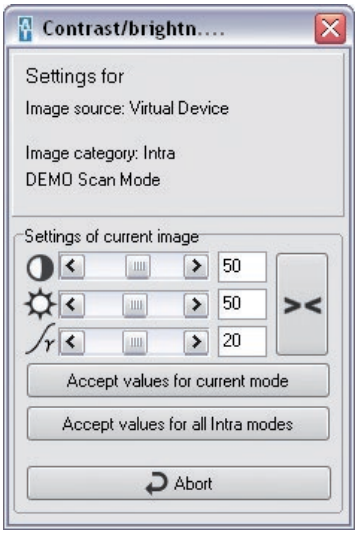


Specify brightness and contrast values for New recordings with ScanX

The image processing box must be closed! After a right mouse click inside the image area, it is possible to activate the appropriate window using the Brightness/Contrast Preset menu option in the context menu.



The changes made to the brightness and contrast as well as the gamma values are shown directly in the current image and can be saved to serve as set values for new images under the same ScanX mode or for all modes of the same type (i.e. Intra or Extra).



Settings of Current Image: Set desired brightness, contrast and gamma values.

><: Reset brightness, contrast and gamma values.

Apply Values for Current Mode: Save current setting values for the ScanX mode currently selected.

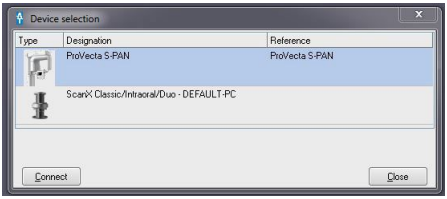
Apply Values for All Intra Modes: Save current setting values for all Intra modes.

7.2 Functions – Single images using ProVecta

Take X-ray image (X-ray menu)

The recording of an X-ray image or a series is initiated by clicking on the button Record a New X-ray Image. If several units are activated, the selection window then appears and the desired unit must be selected. If only one system has been activated, this step is omitted!

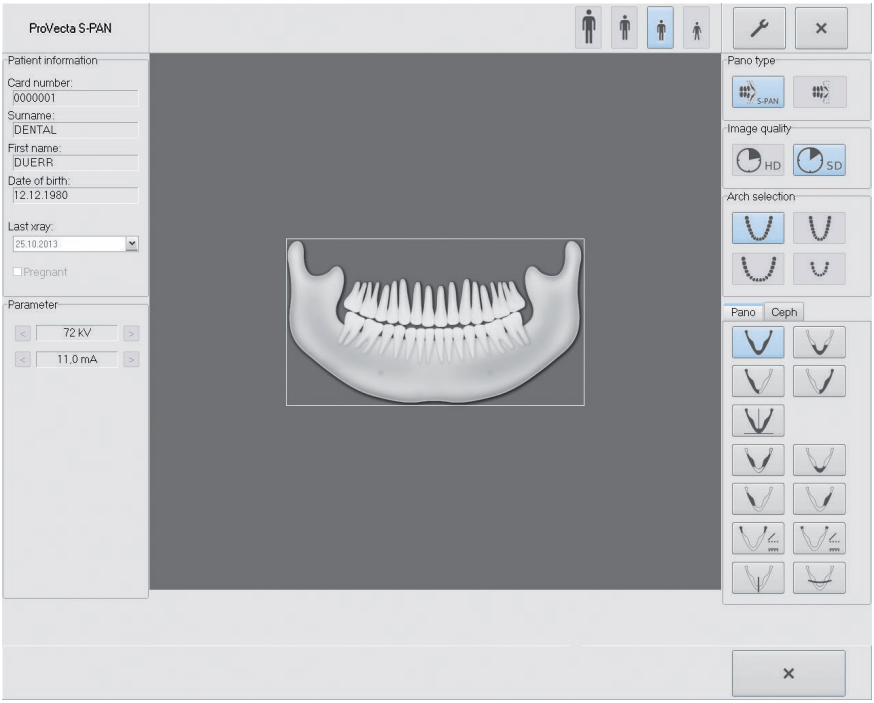
Device selection



The imaging programs can vary according to the selected unit. Not every imaging type is possible with every unit.

X-ray image configuration

Before an X-ray recording can be carried out, a dialog window appears where the recording parameter can be entered or selected.



The parameters patient type, mandible and image program will be pre-selected according to actual patient.

- If the pre-selected parameters are changed then this must be confirmed with ✓ .
  If the pre-selected parameters are to be used, then work can be continued directly using the unit.

Parameter overview

Patient type
Selection of patient type will depend on the patient's size or their head circumference. The pre-selected patient type may require changing as necessary.
Depending on the patient type the X-ray parameters will be set up.
When a child is set up, then the X-ray parameters will be altered:
– reduced dose
– shorter process time
– exposed mandibular arch height is shorter

Large adult

Average adult

Small adult /Youth

Child (< 13 years old)

Panotype
The S-Pan-Technology works by selecting from several flexible layers the area best in focus and presenting this in an image.
S- Pan is pre-selected.

S-PAN

PAN

Image quality
HD: Extended exposure time produces images with higher contrast.
SD: This setting is used for standard images.

HD - Panorama images

SD - Panorama images

Mandibular arch

The selected jaw form influences the rotation process of the rotating unit during imaging. In this way even for especially narrow or wide jaws an image with the ideal layer orientation can be produced.

normal mandibular arch

narrow jaw

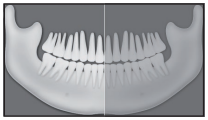
wide jaw

child / milk teeth

Imaging program

Standard
The standard panorama image displays the complete dental area with ascending dental branches and jaw joints.

Front
The image displays a reduced dental area without ascending dental branches.

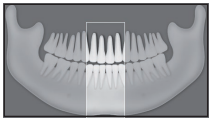


Right
The image displays only the right dental area.

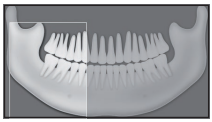
Left
The image displays only the left dental area.

Orthogonal
The image displays the complete dental area and is created 90 degrees to the mandibular arch. In this way overlapping crowns are avoided.

Bitewing
The image displays the posterior quadrant limited to the size of the bitewing.



Bitewing front
The image displays the anterior quadrant limited to the size of the bitewing.



Bitewing right
The image displays the right posterior quadrant limited to the size of the bitewing.

Bitewing left
The image displays the left posterior quadrant limited to the size of the bitewing.

Jaw joint Lat
The image displays the jaw joint laterally with mouth closed and open as 4-fold display forming one image.

Jaw joint PA
The image displays the posterior-anterior jaw joint with mouth closed and open as 4-fold display forming one image.

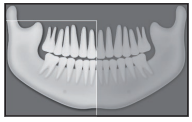
Sinus Lat
The image displays the sinuses laterally.

Sinus PA
The image displays the posterior-anterior sinuses.

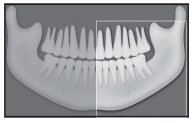
Child imaging program
For panorama images of children the radiation field is reduced using an additional shield. The radiation dose is considerably reduced for this image type.

Standard
The standard panorama image displays the complete dental area with ascending dental branches and jaw joints.

Front
The image displays a reduced dental area without ascending dental branches.



Right
The image displays only the right dental area.



Left
The image displays only the left dental area.

Ceph imaging program

Lateral
The image shows the skull and profile of the head of the patient

PA
The image displays the posterior-anterior skull. It is suitable for semi-axial skull images and provides a cranial eccentric overview.

SMV
The image displays the skull in a submentovertex projection. For example, it is suitable for the imaging of the arch of the jaw and the jaw joints.

Waters View
The image is suitable, for example, for the imaging of the joint head in the temporomandibular joint.

Carpus
The image displays the carpus of the patient. It is suitable for drawing conclusions on the growth stage of the body/jaw.

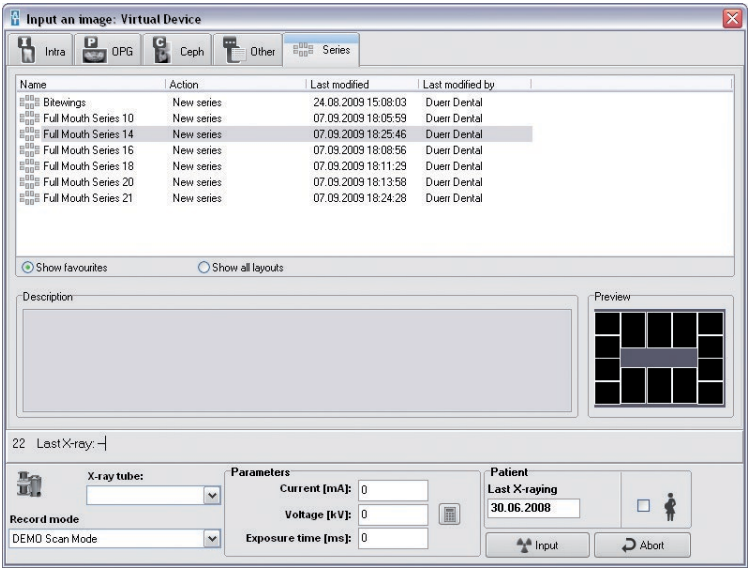
7.3 Functions – Serial images using ScanX and SensorX

Take X-ray image (X-ray menu)

The recording of an X-ray image or a series is initiated by clicking on the Record a new X-ray image button. If both ScanX and SensorX are activated, the selection window then appears and the desired unit must be selected. If only one system is activated, this step is then skipped (see Functions – Single Image Recording chapter).

Select recording scheme

Select the recording scheme for the serial image recording in the Record Image dialog. You can also select and continue a serial recording that is not yet complete.

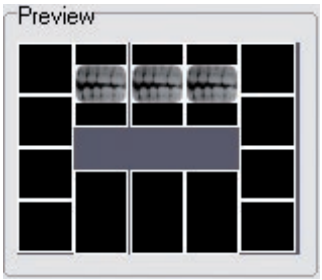


You can detect whether a series is to be newly created or continued from the symbol before the name and from the entry in the Action column.

Create new series

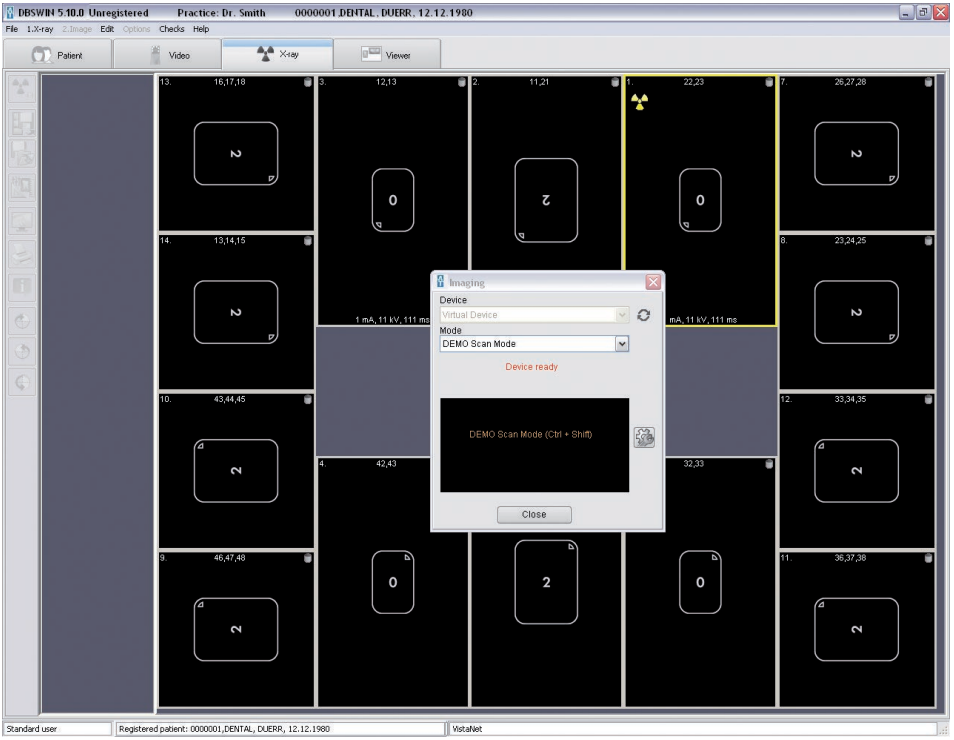
Continue series

You can see the layout and other configuration data of the recording scheme in the lower area of the preview. For series that are not yet complete, you can see the images already created in the preview.



Reading in a series

The serial recording is started by clicking on the Read button. The layout of the recording scheme appears.

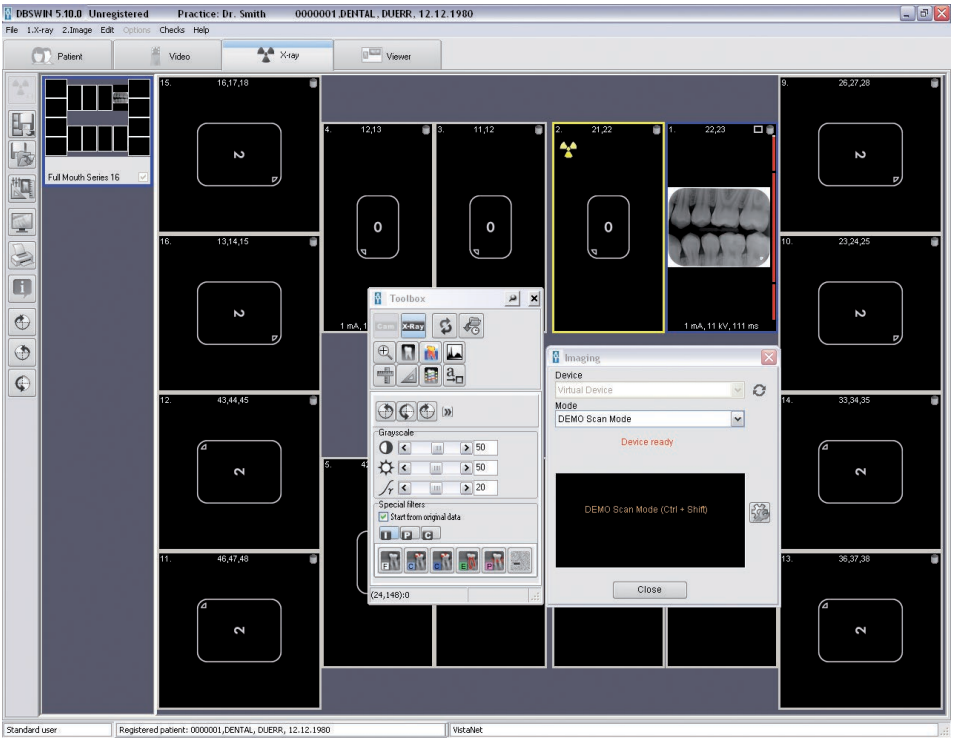


The frames are numbered in the sequence of the recordings to be created. The active frame into which the first/next image is read is framed in yellow.

The next image is read into the frame with the yellow X-ray symbol. By clicking on another frame that does not yet contain an image you can change the frame for the next image. The yellow X-ray symbol then swaps to the frame that you have clicked.

Open the Image Recording dialog and continue recording the serial images.

If you close the Image Recording dialog, thereby canceling the serial image recording, the layout with the already generated images remains visible. You can open the Image Recording dialog again and continue recording the serial image by left clicking on the yellow X-ray symbol in the active image frame.
After the first recording appears, the image in the frame and the next frame is active.



Two symbols appear at the top right of each image frame:

Display image in maximum size (zoom to full screen)

Ignore recording step (if the frame is still empty); Carry out recording again (if an image is already in the frame, but the image has not yet been saved)

0 mA, 0 kV, 0 ms The selected X-ray parameters appear below the image if they have been saved. You can open the Image Information dialog and change the X-ray parameters by clicking on the line.

Editing images:

If you want to recreate the recording, you can edit or delete the image with the toolbox as usual by left clicking in a frame that already contains an image.

Save images in the scroll bar at the edge as single images, assign images from the scroll bar at the edge to a frame

You can also drag an image in a frame out of the frame into the image strip and thus save it as a single image. The image in the frame is retained. Vice versa, single images can also be dragged out of the image strip into a frame.

Exchanging or replacing images in frame

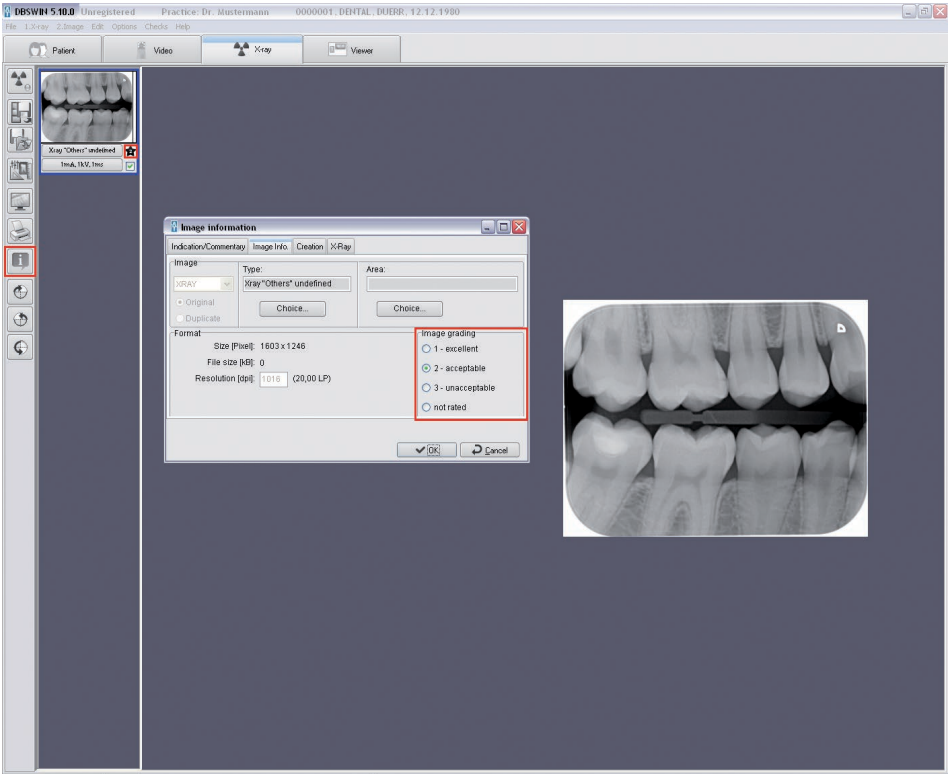
You can also manually drag an image from one frame into another frame and thus correctly arrange interchanged images again, for example. Click on an image, keep the mouse key clicked and drag the image in the desired frame. If the frame already contains an image, the image will be deleted and replaced by the new image.

7.4 Analysis of X-ray images

The quality of captured X-ray images can be analyzed In DBSWIN. A subsequent analysis can be used to determine whether poor image quality is due to the X-ray unit or human error. In some countries, this is required for quality management purposes.

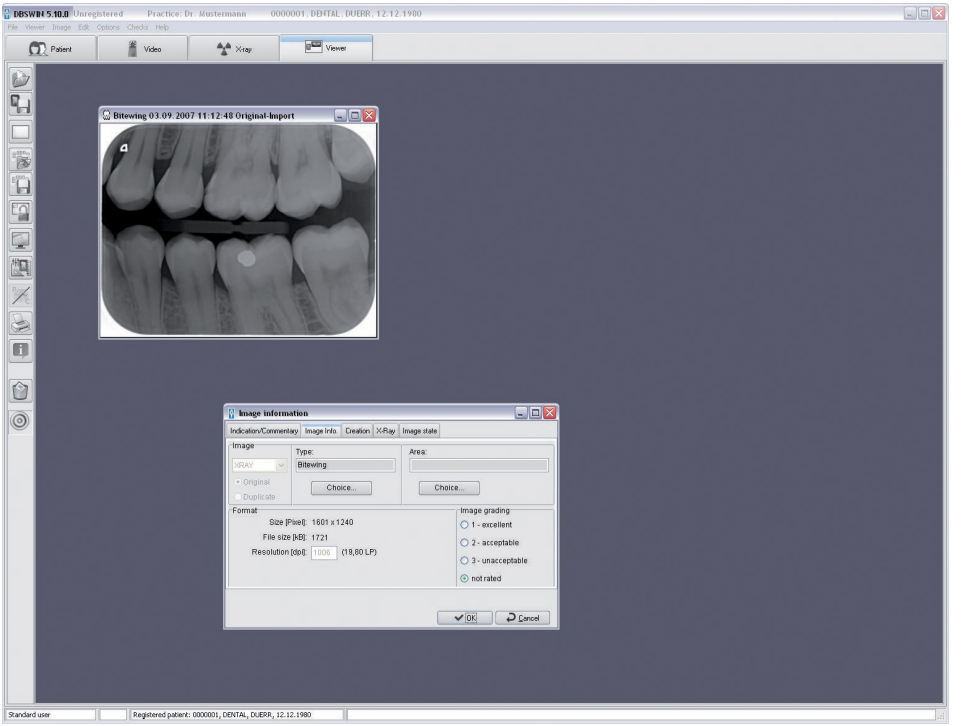
Analyzing X-ray images during the work process

When an X-ray image has been read in, you can use the small star on the symbol bar or the Image Information on Active Image button to analyze it. To do so, click the analysis star icon or the button. If the window is opened using the analysis star, you can enter an analysis under Image Grading in the opened window. If the window is opened using the button, you have to go to the Image Info tab first. Close the window by clicking OK. The analysis is saved when you save the image.



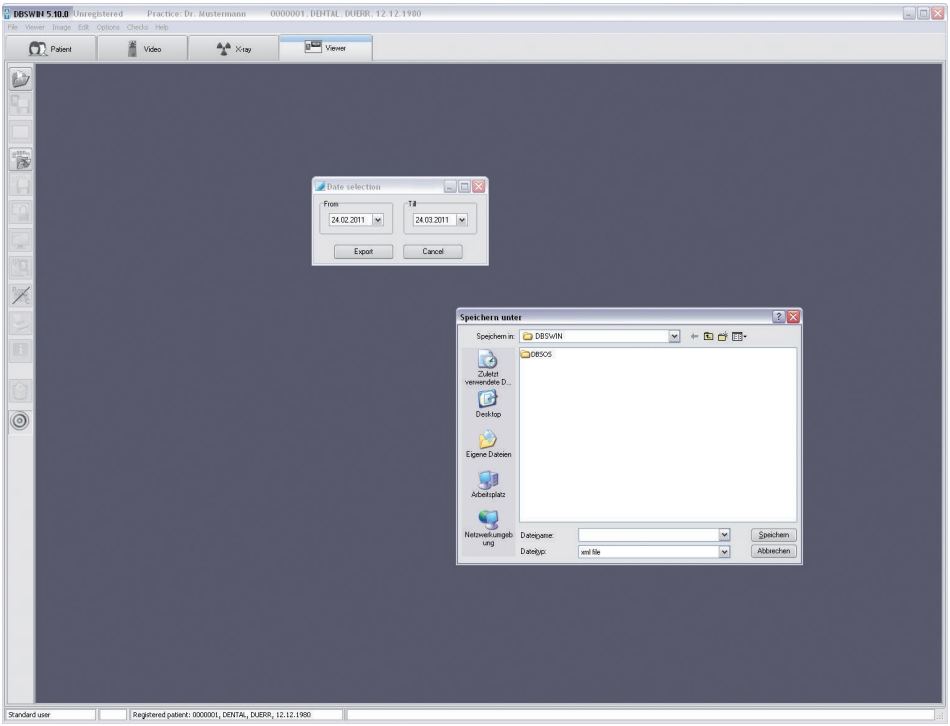
Analyzing X-ray images later on

X-ray images that have already been read in and saved can be analyzed later on using the light table. To do so, open the X-ray images to be analyzed on the light table. If you click Image Information on Active Image, a window opens and you can enter an analysis of the X-ray image on the Image info tab. Close the window by clicking OK. Then save the image by clicking Save Active Image.



Evaluating analyses

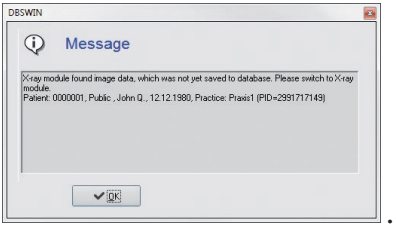
You can click *Options* > *Export image g*rading to compile and output image analyses as an XML file. A data selection window opens where you can specify a period (by default, it is set to the last month). When you click on Export, a Save as... window opens and you can specify a path. DBSWIN saves the XML file here. The XML file can be opened and evaluated using Microsoft Excel, for example.



7.5 What to do after a PC crash

If the computer crashes while you are in the X-ray program module during or after an X-ray recording, the images recorded are not lost!
After a program crash, serial image recordings are saved as single image recordings. After restarting the program, all serial images appear as single images in the image strip and must be manually assigned to the recording scheme of the serial image recording again.

When you restart DBSWIN, a message appears, generally informing you that image data still exists in the X-ray imaging system or is saved temporarily on your hard disk but has not yet been saved permanently in the DBSWIN database.

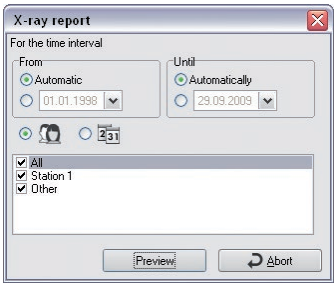


After selection of the X-ray program section, a dialog is displayed, which indicates that another image or several images of a patient has/have not yet been saved in the database. This dialog is only displayed if the image(s) found belong to the office currently selected. The program will prompt you to select the correct patient so that the images can be loaded.

7.6 X-Ray report (X-ray menu)

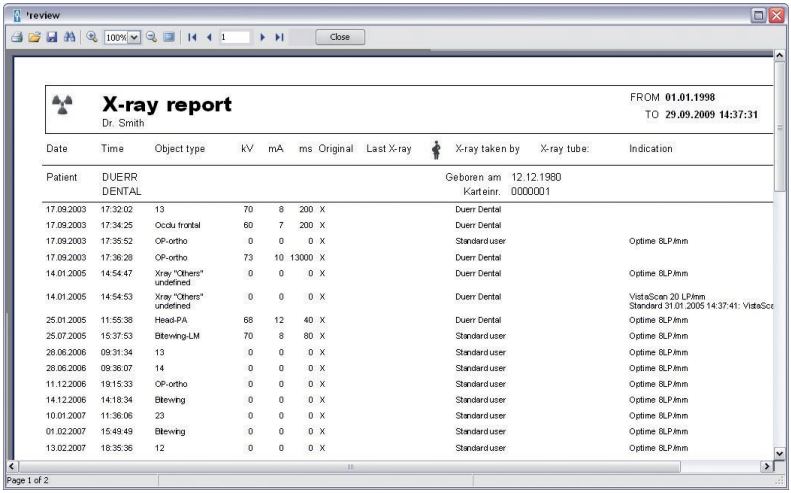
Under the Options/X-ray Report menu item the X-ray report can be printed from any station or you can have a preview of the printout. All X-ray images created are displayed, including those marked as hidden!

Determining the time interval for printing

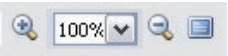


The X-ray report can be printed for a specific time interval. Enter the desired dates. Click the Preview button to display the X-ray report on the monitor. If the time period in the dialog is set to Automatic, DBSWIN suggests the last printout date as the FROM date and the system clock date as the TO date. This list can be sorted alphabetically by patient name or chronologically.
Additionally, selection can take place according to one or more X-ray devices where the X-ray station information has been stored during X-ray processing. X-ray treatment without this X-ray station information is always displayed.

Example of an X-ray report



Function overview of the buttons



Page display: Zoom in / Set to 100% or to a specific percentage value / Zoom out / Full screen

Page display: First page / Previous page / Select page /Next page / Last page

Printer: Open print menu

File: Open / Save

Preview: Close

Preview: Search text

8. Image processing

8.1 General

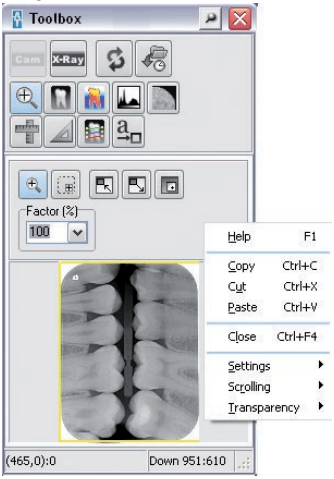
The Image Processing function allows the user to control and amend the image parameters. There is also the possibility to add elements to the original image. These are then stored with the image, but can later be removed if necessary.

8.2 Toolbox

Image processing is carried out with the toolbox. The appearance of the toolbox for the image processing can be adapted.
Click on the Process Active Image button or on the Image Processing entry in the Image menu. The toolbox appears.

Context menu

A right hand mouse click on the toolbox causes a context menu to open.



Unfold

The toolbox can be folded up either completely or partly if it is not used.
Right hand mouse click on the toolbox.
Select Unfold.
Three options can be selected here:
Always Open: The toolbox is not folded up.
Half Open: The additional functions are folded up.
Fully Closed: All functions are folded up.

Visibility

The toolbox can be made transparent against the background with the Transparency option.
Right hand mouse click on the toolbox.
Select Transparency.
Four levels can be selected here:
100%, 75%, 50%, 25%
Depending on the level selected, the toolbox is displayed more transparent or less transparent.
Note: The Transparency function only works in conjunction with the Unfold function. If the Always Open option is selected in Unfold, the Transparency function is automatically deactivated.

8.3 Overview of functions

: Global functions

: Function groups

Function area with image processing functions
In the upper area of the image-editing box, clicking on the appropriate symbol allows you to select either one of the global functions or one of the function groups.
The individual editing functions according to the selected function or function group are shown in the lower area of the image-editing box.

Return to previous image edit function

You can undo the last image processing function by clicking on the button Undo/Redo Last Filter, Rotate, and Mirror Operation or restore it by clicking it again.

Load image status

Click the Load Image Status button (Main Menu/Image or Image Context Menu) to select the Load Image Status entry. One of the image statuses currently available can be selected from the list and can be displayed on the screen.

An image can have one of the following four statuses:

Last saved: Image that was saved last

Diagnosis status: Image in the image information box when saving the first comment (diagnosis, etc.)

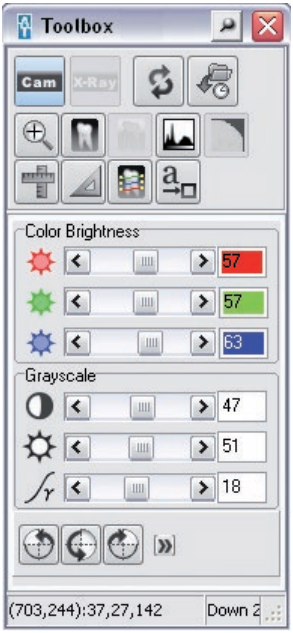
Initial saving: Image in the X-ray module when saving after capturing the image. Where no image editing has been carried out (e.g. no rotation, brightness or contrast enhancement, etc.) on the original image, this will be identical to the original image.

Original data: Image after capturing the image

Video image - main functions for CamX

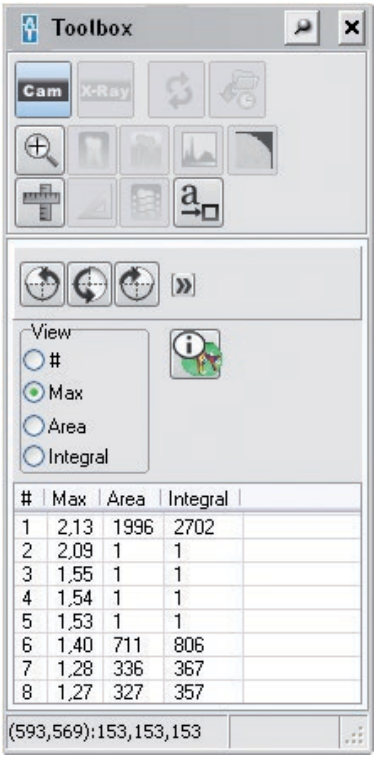
All the principal functions for image editing of video images are displayed in the functional area. Further functions can be selected where necessary.

The settings for individual images can be altered using the sliding bars (red, green, blue, brightness, contrast, gamma) as required.



Video image main functions for CamX devices

All the principal functions for image editing of proof images are displayed in the functional area.



All functions that are not required are deactivated.

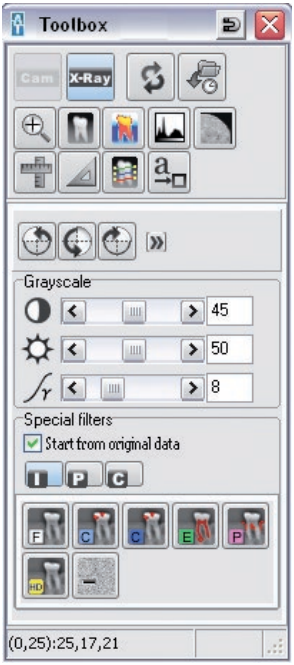
If the # check box is activated, the individual pockets of caries are numbered in the image.
After activating the Max check box, the maximum values of the caries are displayed.
If the Area check box is activated, the size of the individual pockets of caries is shown in pixels in the image.
If the Integral check box is activated, a value calculated from the values of Max and Area is displayed.

The proof color scheme can be opened with the button . The meaning of the color scheme and the numerical values is explained here.

The color scheme and the numerical values give a reliable indication of carious lesions.

X-ray image – main functions

All the principal functions for image editing of X-ray images are displayed in the functional area. Further functions can be selected where necessary.



The settings for individual images can be altered using the sliding bars (brightness, contrast, gamma) as required. Alternatively, you can intuitively change the brightness (horizontal movement of the mouse) and contrast (vertical movement of the mouse) directly in the active image (mouse symbol in the image area =) while keeping the left mouse key pressed.

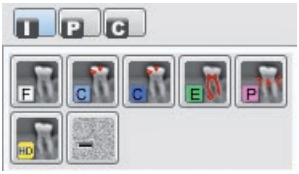
Filters

The filter set assigned to the X-ray image type (INTRA, PANO, CEPH) is displayed by default. For an undefined X-ray image or by clicking the "All filters" button (double arrow) the other filters become selectable. The diagnostic support is performed with original data as long as the "Use Original date" check box is activated. In all other cases the filter is selected matching the current type. The color represents the application case (caries, periodontal, etc.) and the color intensity is a measure of the filter strength if there are several filters for an application case (e. g. Caries1, Caries2).

Structures or objects within the image, which may be of interest for the current diagnosis, are highlighted more strongly. For example, the periodontal gap contrast is displayed more intensely by the periodontal filter.

INTRA filter set

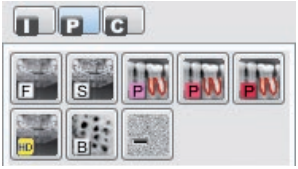
As shown by the display at right, the filter set for INTRA image filtering adjustments are displayed in the functional area. Each of the seven filters are described by the list below. The functions can be selected where necessary.



Icon	Description	Icon	Description
	Intra Fine: General sharpening filter which enhances structures of 2 line pairs per mm.		**Perio:** Enhances structures of 2.5 line pairs per mm with strong attenuation of low frequencies.
	Caries 1: Enhances structures of 2 line pairs per mm with strong attenuation of low frequencies.		**Intra High Diagnostic:** Enhances structures of 2.5mm.
	Caries 2: Enhances structures of 2 line pairs per mm with strong attenuation of low and high frequencies.		**Noise Reduction:** Matches outlier pixels to their neighboring pixels.
	Endo: Enhances structures of 3 line pairs per mm with strong attenuation of low frequencies.		

PANO filter set

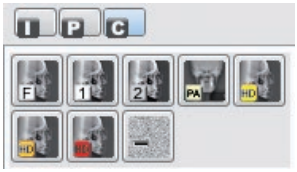
As shown by the display at right, the filter set for PANO image filtering adjustments are displayed in the functional area. Each of the eight filters are described by the list below. The functions can be selected where necessary.



Icon	Description	Icon	Description
	Pano Fine: General sharpening filter which enhances structures of 2 line pairs per mm.		**Periodontal 3:** Enhances strongly structures of 0.25 line pairs per mm with strong attenuation of low and high frequencies.
	Pano Standard: Enhances structures of 0.25 line pairs per mm with strong attenuation of high frequencies.		**Pano High Diagnostic:** Enhances structures of 4mm and sharpens the image.
	Periodontal 1: Enhances structures of 0.5 line pairs per mm with strong attenuation of low and high frequencies.		**Emphasize Bone Structure:** Enhances structures of 0.2 line pairs per mm with strong attenuation of high frequencies.
	Periodontal 2: Enhances structures of 0.75 line pairs per mm with strong attenuation of low and high frequencies.		**Noise Reduction:** Matches outlier pixels to their neighboring pixels.

CEPH filter set

As shown by the display at right, the filter set for CEPH image filtering adjustments are displayed in the functional area. Each of the eight filters are described by the list below. The functions can be selected where necessary.



Icon	Description	Icon	Description
	Ceph Fine: General sharpening filter which enhances structures of 1 line pair per mm.		**Ceph High Diagnostic-10:** Enhances structures of 10mm and sharpens the image.
	Ceph 1: Enhances structures of 0.75 line pairs per mm with strong attenuation of high frequencies.		**Ceph High Diagnostic-5s:** Enhances structures of 5mm and sharpens the image lightly.
	Ceph 2: Enhances strongly structures of 0.25 line pairs per mm with very strong attenuation of high frequencies.		**Ceph High Diagnostic-5g:** Enhances structures of 5mm and sharpens the image.
	Ceph PA: Enhances strongly structures of 0.5 line pairs per mm with very strong attenuation of high frequencies.		**Noise Reduction:** Matches outlier pixels to their neighboring pixels.

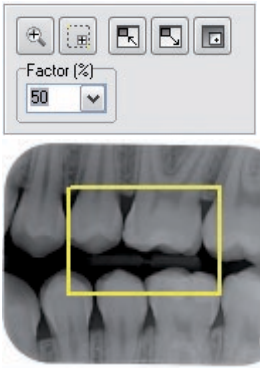
Image rotating & mirroring

In addition, the mirroring functions are hidden and shown with the button .

Depending on which of the symbols has been selected, starting with the current image, the image will be rotated 90°,180° or 270°.

You can undo the last rotation or mirroring again by clicking on the button "Undo/Redo last filter, rotate and mirror operation" (main functions).

Zoom tools



The zoom tools allow you to view the complete image or, alternatively, a section of the image either enlarged or reduced in size.
1. To display the image with a magnification factor, please click the magnifying glass. Clicking the left mouse key within the image enlarges it; a right hand mouse click reduces it. Alternatively, it is possible to enter a percentage figure in the list field or to select a factor. Confirm selection with Enter.
2. The Draw Rectangle function lets you draw a square on the image, which is displayed as a yellow frame on the preview image. You can move the yellow frame in the preview image with the mouse. This selected part is displayed magnified in the image frame.
3. The Set Image Window Size to the Image Size function is used to adjust the frame on the magnified image.
4. The Adjust Image to Window Size function is used to adapt the image to the frame size.
5. The Magnifying Glass (Local Zoom Window) function displays a magnifying glass window on your image, which you can move and magnify as required. The zoom factor is selected using the sliding scale at the side of the screen.
6. You can enter a fixed magnification value in the Factor area.

If the toolbox is closed, the magnifying glass can be opened via the context menu with a right hand mouse click. The magnifying glass can also be activated with CTRL+right hand mouse click.

Filter functions

The filter functions can be selected by clicking the relevant active filter function symbol. Filter operations can be undone by clicking on the Undo/Redo Last Filter, Rotation, and Mirror operation (main functions) button. To get back to the original image, please click the Load Image Status button in the upper selection bar.
The original image can be restored after saving by clicking the Load Image Status button.

Drawing levels

The image processing box supports four drawing layers whose graphic elements can be made visible or invisible individually (On check box) or all together (All check box):

Angle measurements

Length measurements of lines and polygons

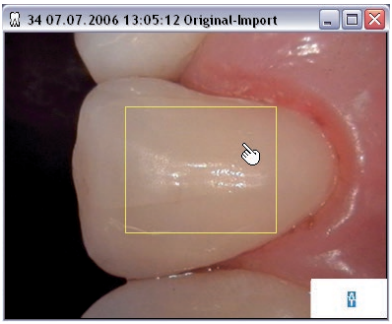
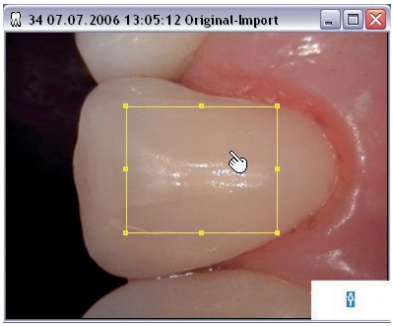
Density along a line or polygon

Text, line and closed line elements

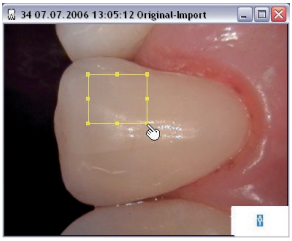
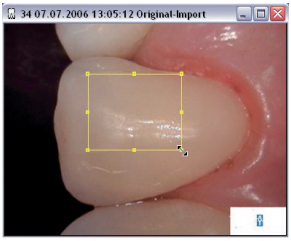
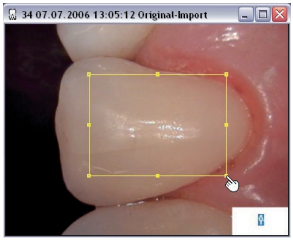
Create graphic elements

In order to create a new graphic element, select the elements required and click the appropriate symbol. Plot the starting position of the relevant element by clicking the left mouse key on the required portion of the image. You can now determine the size and layout of the element by moving the mouse. The element is fixed in place with a simple left mouse click.
After any creation the last used graphic element is always the active one. This is displayed by a dotted line surrounding the element and a hand as cursor. You can now change the parameters of the elements, for example color, size, layout and background color.

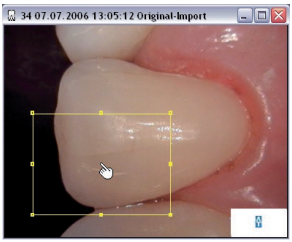
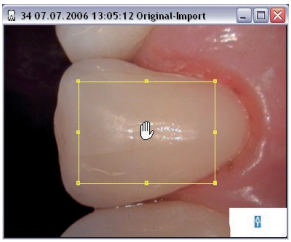
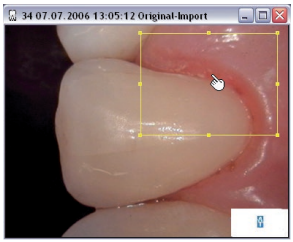
Activate graphic elements

1. Left click on element with link select mouse cursor (finger symbol). Holding down the shift key allows other graphic elements to be activated.	2. Marking frame is visible with handles of the active element.
	

Alter graphic element size

1. Set + left click link select mouse cursor (finger symbol) on a handle of the active element.	2. Double arrow mouse cursor appears. Move the mouse to alter the size of the element + left click to finish.	3. Link select mouse cursor (finger symbol) appears again.
		

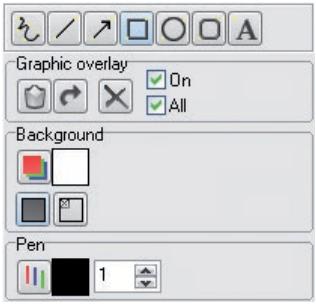
Move graphic element

1. Left click on element with link select mouse cursor (finger symbol).	2. Hand mouse cursor appears. Move the mouse to move the element + left click when finished.	3. Link select mouse cursor (finger symbol) appears again.
		

Common functions at drawing level

Delete...: Deletes active graphic elements
Undo Delete: Undoes the delete of active graphic elements
Delete Graphic: Deletes all graphic elements
On check box: Make current drawing level visible or invisible
All check box: Make all drawing levels visible or invisible

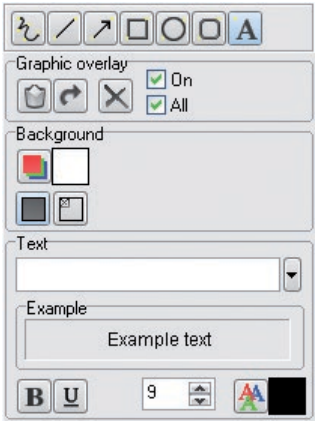
Text, line and closed line elements



: Create closed line element

Background:
: Select background color
: Filled background
: Transparent background

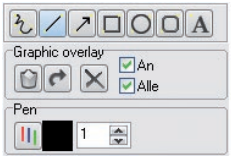
Pen: Pen color can be selected; Pen thickness: can be selected via list field



: Create text element

Background:
: Select background color
: Filled background
: Transparent background

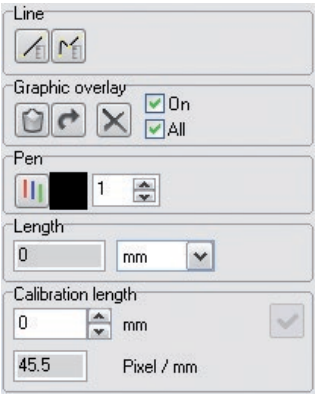
Text: Text can be input or changed
Example: Text can be displayed
: Adjustable text attributes: Bold, underlined, size, color



: Create freehand line elements

: Create line elements

Length measurements of lines and polygons



: Create simple line

: Create polygonal line

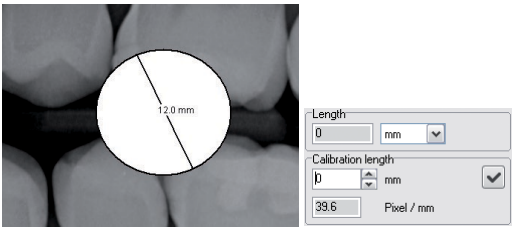
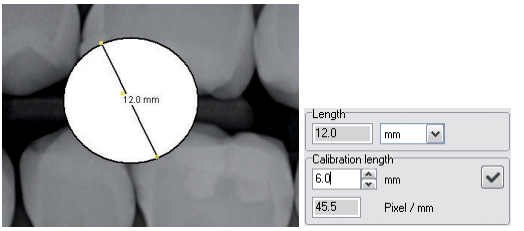
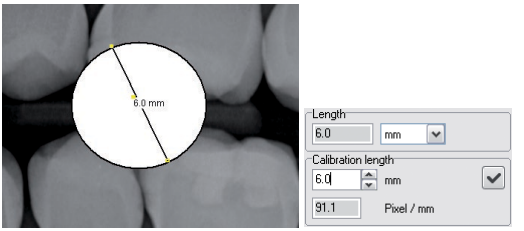
Length: Specify actual length and unit of the line (pixel, cm, mm, inch)
Attention: A calibration must always be carried out for cm, mm or inch!

Calibration length: Select or enter calibration length in the field.

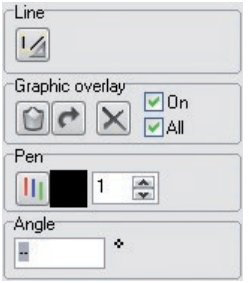
: button: Apply calibration length
Attention: This is not possible for unit = pixel!

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 image.
- Do not use a panoramic image for the measurement.

Calibration using a steel sphere as reference object

	Lay route in defined reference object, e. g. Select Unit = mm and enter route as 12 mm.
	The calibration length must be selected! Set calibration length = 6.0 mm. Apply calibration length by clicking the button Use Selected Line for Length Calibration.
	All future measurements will be based on this calibration. This calibration can be repeated at any time!

Angle measurements



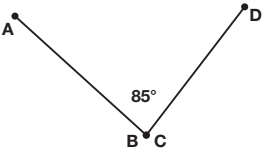
Line: Create an angle
Angle: Included angle is displayed. (in the example: 85°)

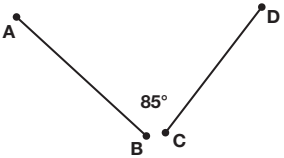
Create side 1

Left mouse click
Drag route from A to B in the direction of the apex with the mouse.
Complete side or line 1 at point B with left mouse click.

Create side 2

Left mouse click at point C
Drag the mouse from point C to point D.
Complete side or line 2 at point D with left mouse click.



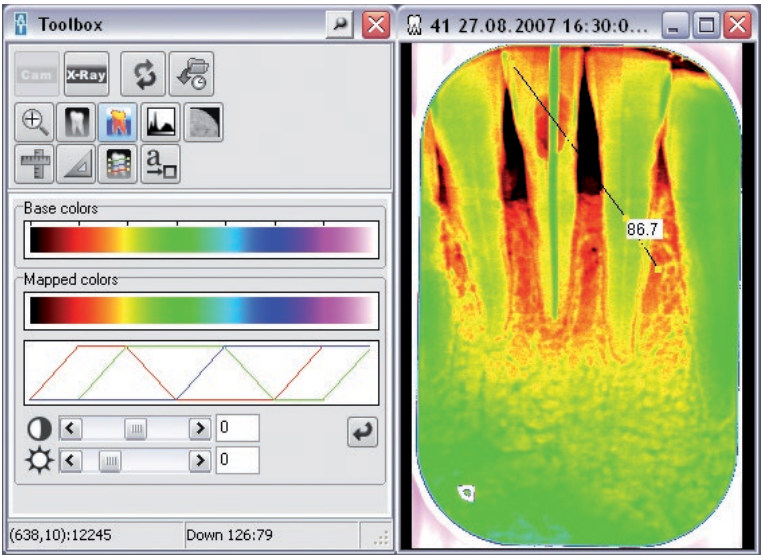


Density profile

The color density values all along a line are shown. The desired line is drawn in the image window by using the Create new line for profile analysis button (screenshot -> Line). The line color can be defined by clocking the Pen color button (screenshot ->Pen).
If you click inside the density window, a crosshair cursor will appear in the image and in the density window. By moving the crosshair cursor inside the density image, the density values along the line are shown in the fields below. Both crosshair cursors are synchronized so the position in the image can be determined precisely. The current value of the intensity (density) and the position are shown.
The current intensity value and the set scale values are displayed in two fields once more.

Pseudo colored image

You can set the pseudo color using the sliders. The pseudo colored image will not be stored! The basic colors can be selected individually to get your optimum of color transitions by clicking on the stripe base colors within the color you want to be replaced by another color. The Windows color selection box appears where you can select the new color. After confirming the selected color, the basic color range previously selected will be replaced with this color.



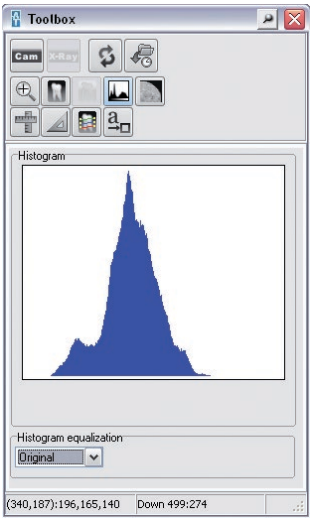
The basic colors and the slider are reset to the standard values with the Set Standard button .

Histogram (contrast enhancement)

This function allows the distribution of the available intensity values to be spread to cover the complete area. Therefore small differences of gray levels are enhanced and will be visible to the human eye. The enhancement characteristic depends on the selected enhancement function (best fit, linear,..). The enhancement function can be selected from the list. The original state can be restored by selecting Original from the pull-down menu.

NOTICE
Optimally extended original images cannot be extended any further!

Color images

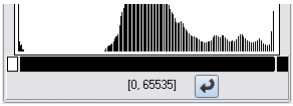


The Contrast extension range cannot be changed for colored images!

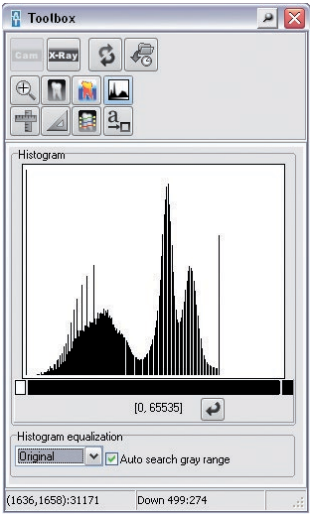
Grey scale images

The Contrast extension (histogram windowing) can be manually changed by defining the length of the black bar below the histogram by dragging while pressing the left mouse key. The gray scale in the area of the black bar is always displayed at 256 gray scale for display on the monitor.

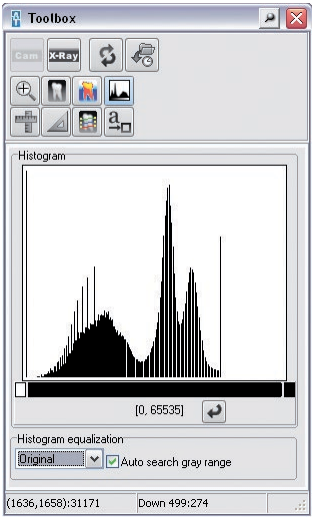
By clicking the Set Standard button the entire gray scale range is shown (bar extends across the entire area).



8-bit grayscale images



16-Bit grayscale images



16-bit gray scale images from ScanX: Low dose = 0; High dose = 65535

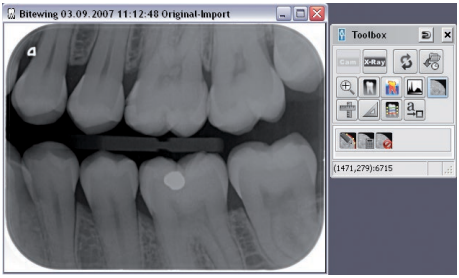
If the Automatic Gray Range Search check box has been checked, the window displaying the histogram of the ScanX images will be carried out using the upper and lower limits, which have been predetermined for scan mode in the VistaConfig.

Edge masking

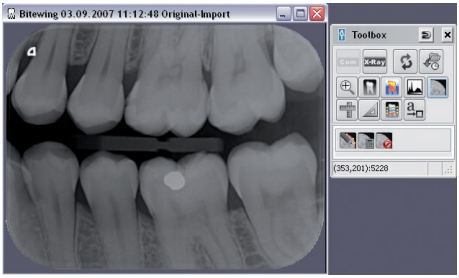
Edge masking adjusts the white edge of an X-ray image - which is created during the reading process - in line with the color of the light table. This aims to prevent dazzle in darkened rooms, thus making diagnostics of the X-ray image easier. Edge masking can be applied to all intra formats of ScanX devices.

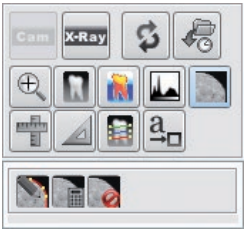
Click the Edge Masking button to trigger the automatic detection of the edge and image plate rotation; the color of the light table is laid over the X-ray image to mask the edge. The image information is not lost; it is simply covered.

X-ray image without edge masking



X-ray image with edge masking





: Modifies the contour of the edge mask

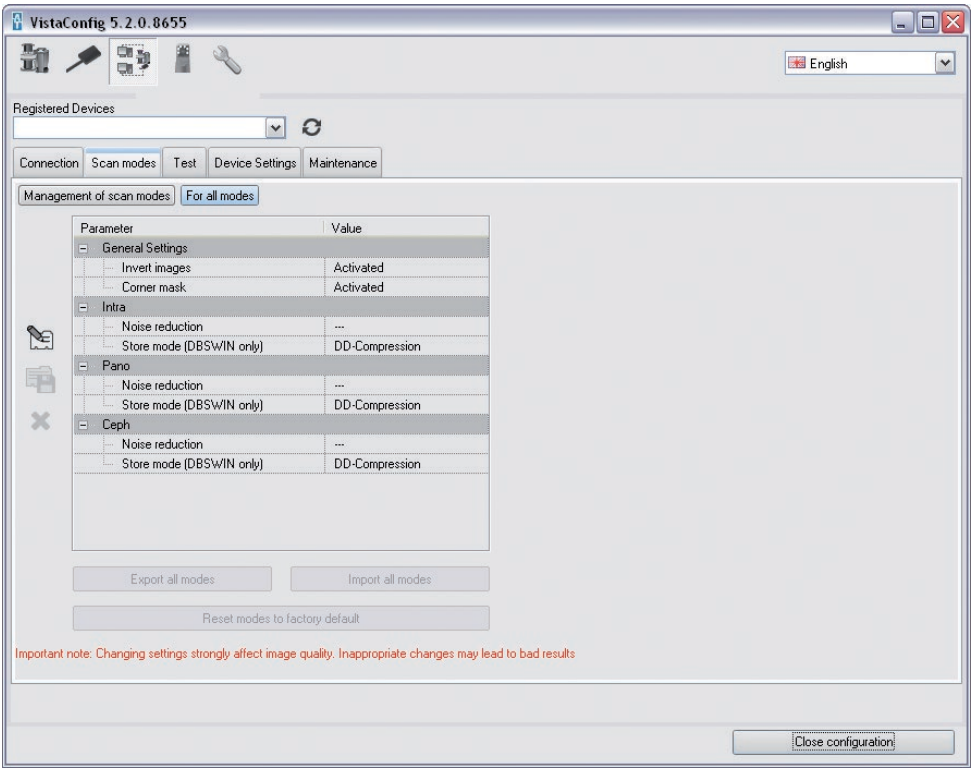
: Recalculates the edge mask

: Deactivates edge masking

If you want edge masking to be applied automatically when images are read in, you must activate the function in VistaConfig (the function is only applied to X-ray images that are read in after activation).

Proceed as follows:

- Start VistaNetConfig by choosing *Start* > *All Programs* > *Air Techniques* > *VistaEasy* > *VistaConfig*.
- Press F2.
- Go to the Scanning Modes tab.
- Choose For All Modes.
- Click Edit Mode Configuration.
- Under Intra, activate edge masking.
- Click Save Mode Configuration.
- Close VistaConfig.



9. Printing

9.1 Setting up a printer

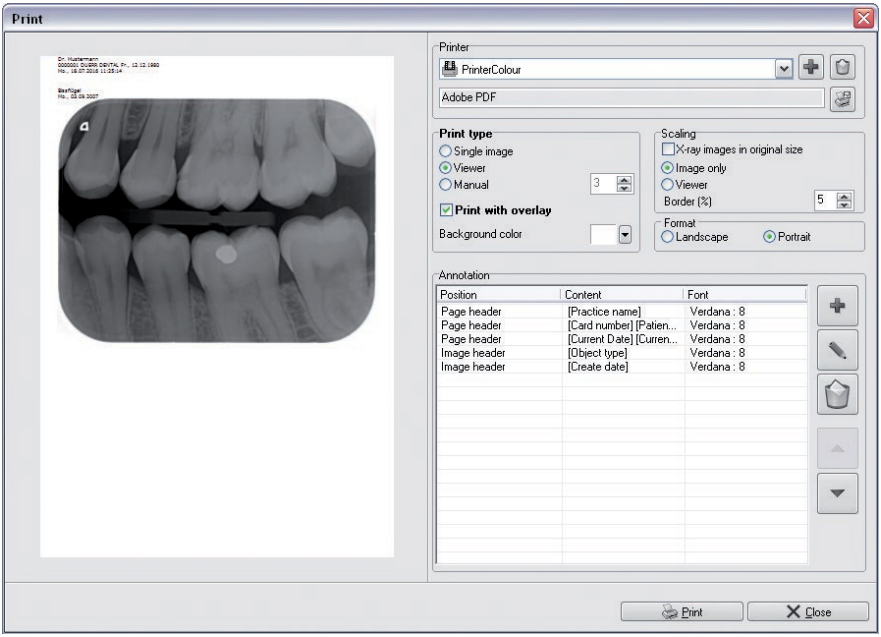
Before you begin with the printer set-up in DBSWIN, a printer should already be installed in the Windows operating system. Further information for setting up a printer under Windows can be found in the Windows online help or in the Windows manual.
The printer set-up under DBSWIN must be performed at each workstation!

NOTICE
Depending on the printer model used, printer settings used (e. g. high-speed printing mode at reduced quality) and paper grade, the quality of the print-outs can be very different. These factors also influence the level of detail and number of grey scale steps. If printouts of X-ray images are to be used for diagnostic purposes, it is necessary to determine whether the print quality is sufficient by printing out a grey scale test image (C:\Program Files (x86)\AirTechniques\DBSWIN\Point4096x3072.tif).

The dialogs or menu items described below can be activated if there is at least one image on the light table.

Calling up the Print dialog window

You have the following options to activate the Print dialog:
Open it via the menu bar under Image/ Print or Light Table/ Print.
By clicking on the Print button, the Print Single Image or Print Light Table dialog window appears.
Click on the Options tab when the Print dialog box is activated to access other settings.



A preview image is shown in the area on the left. In the area on the right, the pre-settings for printing can be changed. If pre-settings are changed, the changes made can be checked in the preview image.

"Printer" area

"Printer" list field: Select printer profile

- Click on the pull-down button and select the desired profile.

: Create new printer profile

- Click on the "Create new printer profile" button.
- Click into the text field and name the new profile.
- Make all settings as described below.

: Select printer

Click on the printer button and select the desired printer.

: Delete printer profile

- Click on the "Selected printer profile" button.
- "Click on "Delete".
  The selected printer profile is being deleted."

"Printing type" area

Single image:
The selected image is printed

Light table (Viewer):
All images on the light table are printed.

Images per line:
When activating the "Images per line" button the images for printing are presented in rows and columns. This allows the number of images per line to be set.

Print with drawings:
If the "Print with overlay" check box is activated, drawings that were added with the help of the toolbox are also printed.

Frame / Background color:
Choose any color for the image background.

"Scaling" area:

X-ray images in original size:
If "X-ray images in original size" is activated, the images will be printed in their original size.

Image only:
If the "Image only" check box is active, the smallest possible space around all images is determined and the print is scaled to one page.

Light table:
The "Light table" button scales the print of the complete light table to one whole page.

Border (%):
The setting, "Margin (%)", defines the margin around the printout. The header remains unchanged. The margin is implemented differently depending on the settings in "Printing type" and "Scaling". The images are fitted proportionally. The result can be checked in the preview image.

"Format" area

- Select portrait or landscape format.

"Annotation" area

This selection field is used to add automatically printing information to images, e. g. patient name, birthday, patient ID, etc. Existing annotations can be processed or deleted.

- Click on the "New Annotation" button.
- Select where the information should appear under “Position” in the "Annotation Line" dialog.
- Select the font type, font style, and font size in the "Annotation Line" dialog under “Font”.
- Select the information that should be added in the pull-down menu of the “Contents” field. Multiple selections are possible.
- Confirm with "OK".

Example: Add logo

- Click on the "New Annotation" button.
- Select the place at which the information should appear under “Position” in the "Annotation Line" dialog.
- Enter the font type, font size, etc. using "Font" in the "Annotation Line" dialog.
- "Do not make any entries in the "Content" editing field.
  The text is overwritten by the name of the logo."
- "In the pull-down menu of the "Content" field, select the "Logo > Import new logo" item.
  If any logos were imported in the past, these logos are shown in the list for selection."

If the logo can no longer be displayed, for example because it was deleted from the hard disk, an error text is displayed. The error text has the same formatting as entered in "Font".

- "Select the required logo.
  Possible file formats: BMP, JPG, PNG"
- "Click on "OK" to confirm.
  The imported logo is shown in the preview image."

The size of the logo cannot be adapted by means of the pre-settings. The size of the logo depends on the resolution and the size of the imported image.
If the logo is to be larger or smaller, the imported image must be changed accordingly and then re-imported.

10. Server Manager

For information on the procedure for carrying out data backup, see section 2 - Data Backup.

CAUTION
Risk of data loss due to incorrect configuration
Configuration must only be carried out either by Air Techniques personnel or by a suitably qualified person approved by Air Techniques.

10.1 General functions and use

The Server Manager is for the central management and configuration of the network services and the DBSWIN data inventory. In addition, tasks relating to the backup and restore of the databases and to intercommunication with clients are carried out here. The Server Manager is also used for maintenance tasks relating to the DBSWIN data inventory. The Server Manager is installed and configured by the system administrator or service technician during the DBSWIN installation process.

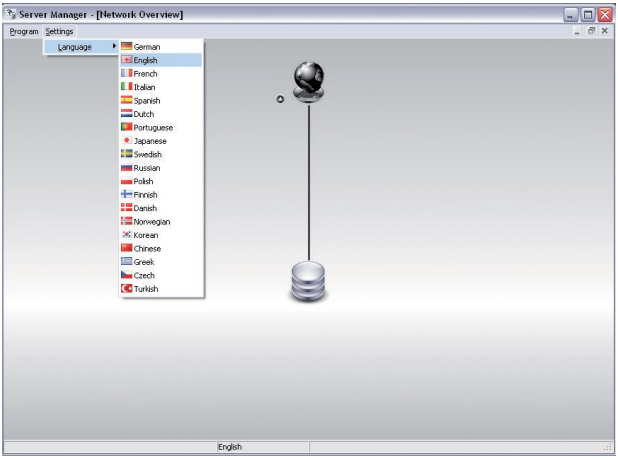
10.2 Launching the Server Manager

NOTICE
Only execute the Server Manager on the computer acting as the DBSWIN server.

- Launch the Server Manager by choosing *Start* > *All Programs* > *Air Techniques* > *DBSWIN* > *Server Manager*.

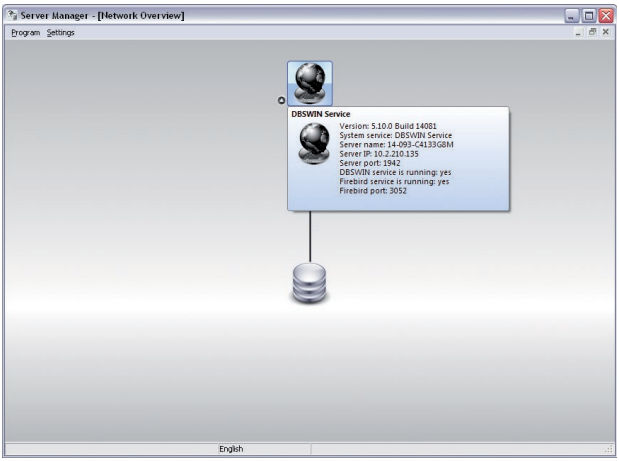
10.3 Language Settings

- Choose Settings -> Language to select the required language for the Server Manager.

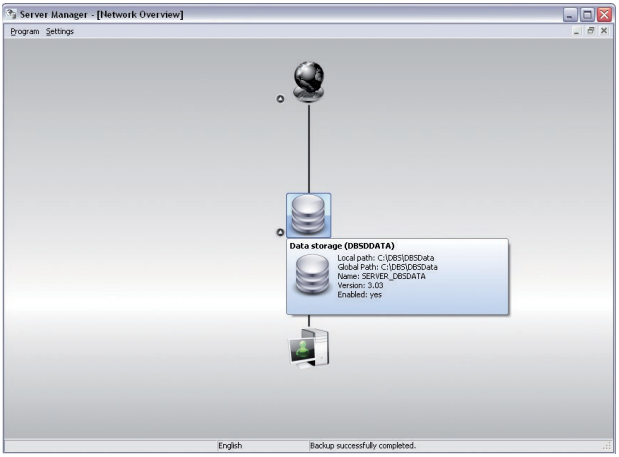


10.4 DBSWIN Service

- When you hover the mouse over the DBSWIN Service symbol, the properties of the service are displayed.
- If you click the DBSWIN Service icon, additional actions for managing the service and tasks appear.



- When you hover the mouse over the Data Inventory symbol, the properties of the data inventory are displayed.
- If you click on the Data Inventory symbol, further actions for managing the data inventory appear.

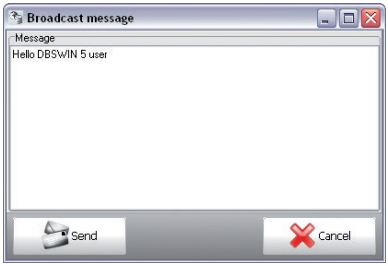


Sending messages to logged in clients

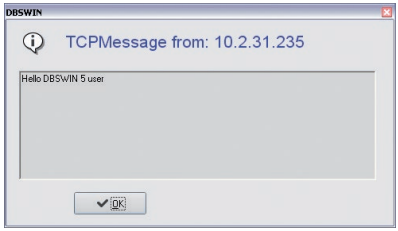
For administrative purposes, central messages can be sent to all connected DBSWIN clients from the Server Manager. The messages are sent using the TCP network protocol.

- Click the DBSWIN Service icon.
- Select the option for sending a message to everyone.

- Enter your message.
- Click Send.



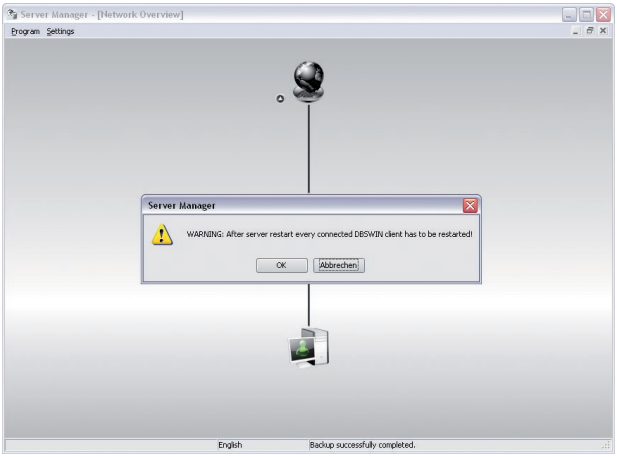
- Message at client station.



Restart the server

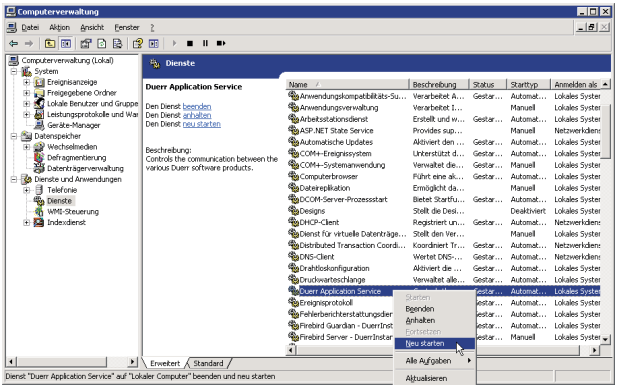
The Dürr Dental Server and Firebird Server services can be restarted from the Server Manager. As a result, all clients that are logged into DBSWIN have to log in again.

- Click the DBSWIN Service icon.
- Choose the option for restarting the server.



- Confirm the message with OK

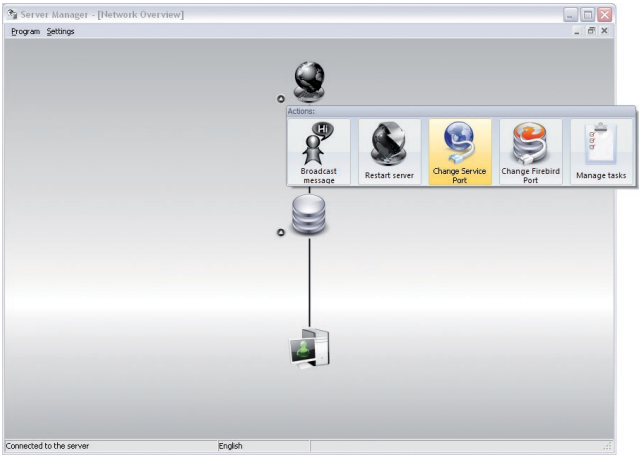
You can also manage the DBSWIN service in Windows Service Management. It appears there as DBSWIN Service.
The Firebird SQL server service appears as Firebird Server - Duerr Instance and Firebird Guardian - Duerr Instance.



Changing the service port

NOTICE
Once you have changed a service port, you must manually modify the same port settings on all DBSWIN clients. Service port changes should only be made if there are conflicts with firewall settings or other software.

- Click the DBSWIN Service icon.
- Choose the option for changing the service port.



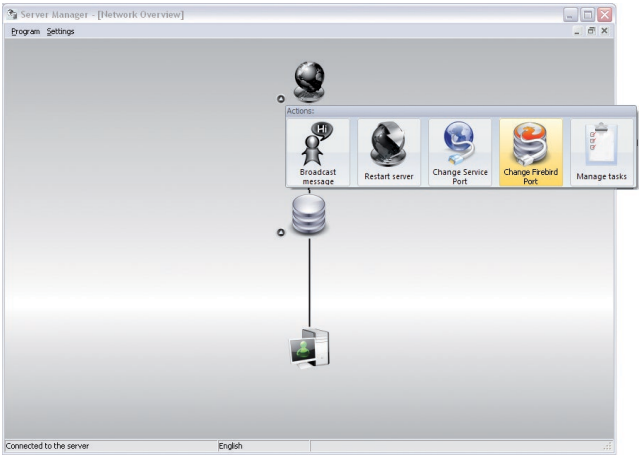
- Read the message and confirm by clicking OK.

- Select another port and confirm by clicking OK.

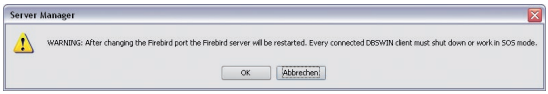
Changing the Firebird port

NOTICE
Once the Firebird port has been changed, all DBSWIN clients must be restarted or switched to SOS mode. Changes to the Firebird port should only be made if there are conflicts with firewall settings or other software.

- Click the DBSWIN Service icon.
- Select the option for changing the Firebird port.



- Read the message and confirm by clicking OK.

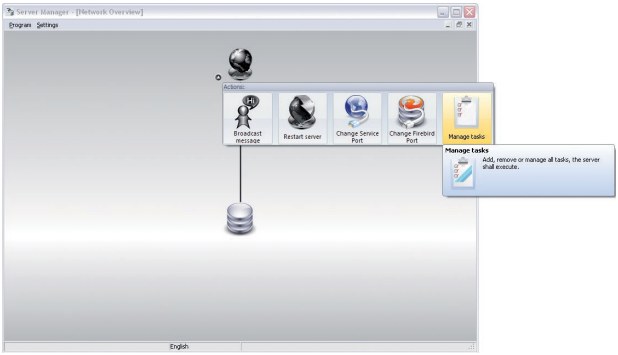


- Select another port and confirm by clicking OK.

Manage tasks

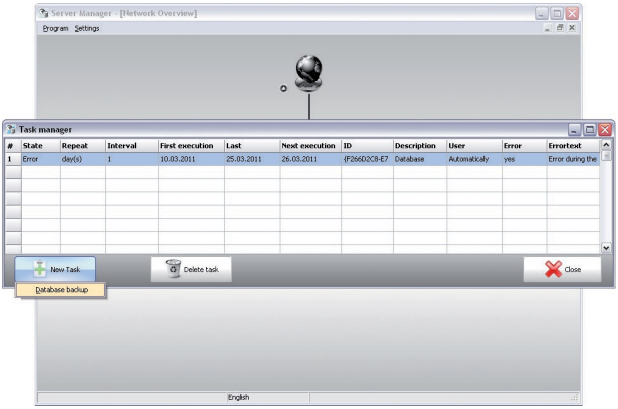
Create new backup job

- Click the DBSWIN Service symbol and then click the option for managing tasks.

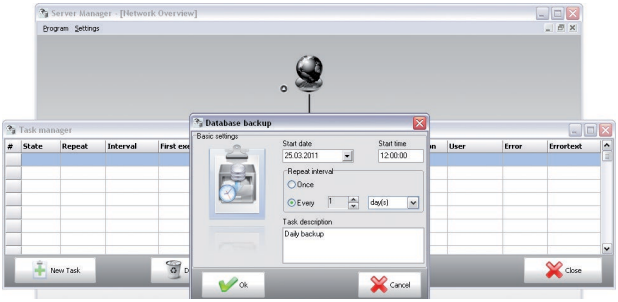


- Click the option for a new task and then select the option for a database backup

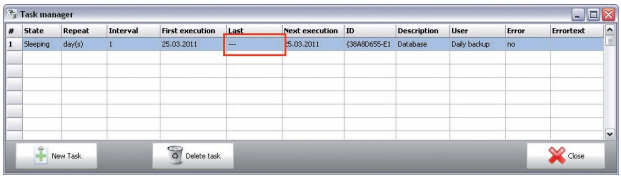
NOTICE
If you select Database Backup, X-ray and video images are not backed up.



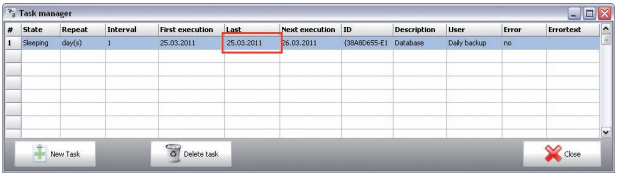
- Fill in the required fields for a new backup job in order to create a job for backing up the database at a specific time each day, for example.



- The created backup job and its properties are displayed in the Task Manager.

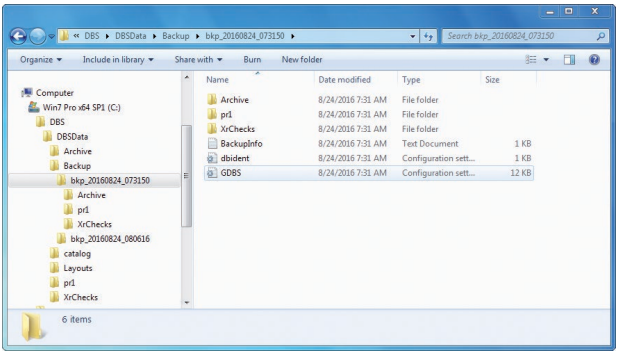


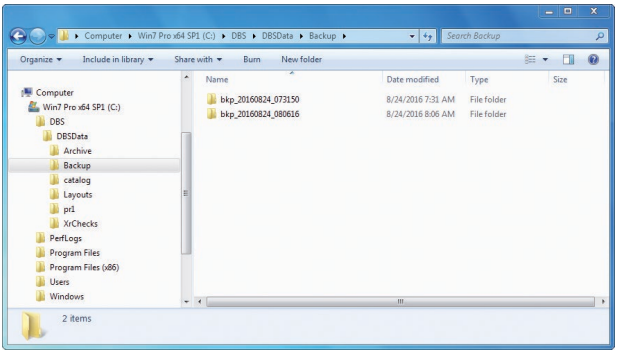
- Task Manager display following successful backup.



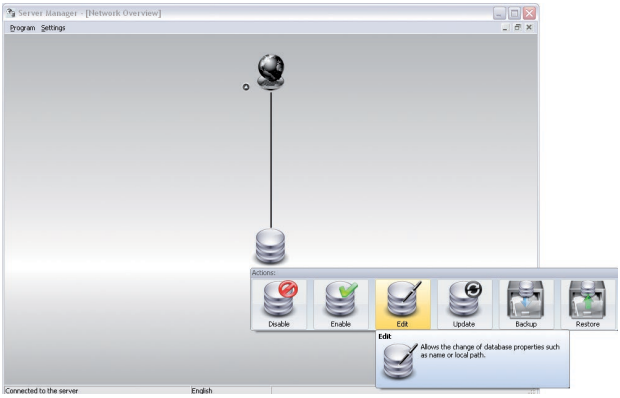
Storage location of database backups?

The database backups are written to the DBSWIN server. A Backup directory is created beneath the central directory DBSData. The backups are stored here, labeled with their date and time. The system automatically retains the last 20 generated backups before replacing the oldest with new backups. Backups that were created manually using the Server Manager are not overwritten.





10.5 Data inventory (DBSDATA)



Deactivate/activate

The database can be activated and deactivated, e.g. for maintenance, using this function.

- Click Deactivate.
  The database is deactivated.
- Click Activate.
  The database is activated again.

Edit

Edit allows the paths for the local/global path to be edited.

- Click Edit.
- Make your changes.
- Click OK.

Update

Update allows a database of an older version, e.g. one that has been copied, to be updated to the latest version.

- Click Update.
  The update is started.

Save

This function allows a manual backup of the database to be started.

- Click Save.
- Enter a comment on the backup.
- Click OK.
  The database is saved.

Restore

Restore allows backups to be managed or installed again.

- Click Restore.
- Select a backup.
- Click Install.
  The backup is installed again.
- Click Delete.
  The backup is deleted.

10.6 Moving the data inventory

Example: Moving a single-station system to a network system with a server and clients.

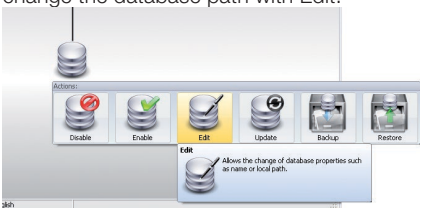
You have to move the entire DBSWIN data inventory from one computer (e.g. single-station system) to a new computer (e.g. server for multi-station operations) in several steps. First, you must create a fully functional total data backup (see section 2 - Data backup) of the existing DBSWIN system.

Step 1:

- No DBSWIN client may be started. You can check this in the Server Manager.
- Deactivate the data inventory. The deactivated state is then indicated by the corresponding symbol.
- Copy the whole folder DBSData of the local installation (standard path: C:\DBS) to any segment on the server drive.

In order that the folder can be used by all the clients in the network, it must be enabled in the network and the corresponding user rights assigned.

- Install DBSWIN on the server (see E7202 Installation on Server). Answer the question for the local database path with the new path of the copied folder DBSData or, if DBSWIN is already installed, change the database path with Edit.

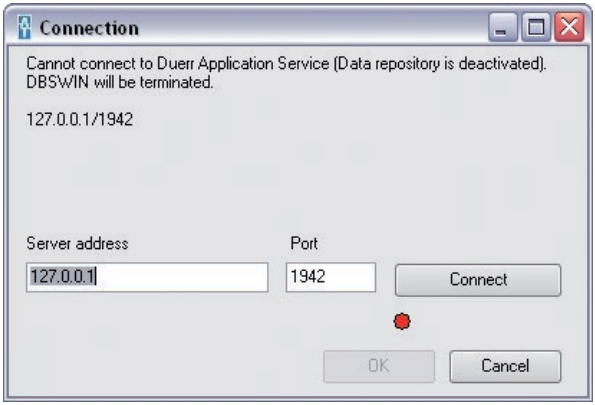


- If the database was copied from an older installation, it now has to be updated. Start the Server Manager and click Update for the data inventory.

Step 2:

The following steps have to be performed on all clients which are to have access to the new database and on which DBSWIN is already installed.
If new computers are to be integrated into the network, DBSWIN has to be installed as a client installation (see E7202 Installation DBSWIN (Clients).

- Start DBSWIN.
  A message is displayed that no database was found.



- Enter the new server address and port.
- Click Connect.
  The client is connected to the new database.
- Click OK.

Step 3:

- Delete the old folder DBSData of the local installation.

11. Display Monitor Test

11.1 General

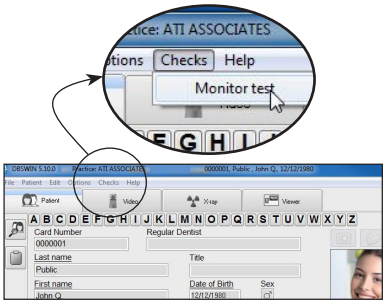
The Display Monitor Test function allows the user to check that the monitor as configured can be used as a diagnostic station. The monitor should not be used if this test shows that the monitor does not have the ability to display the gray scale and contrast needed for X-ray diagnosis. Run the Display Monitor Test by performing the following steps.

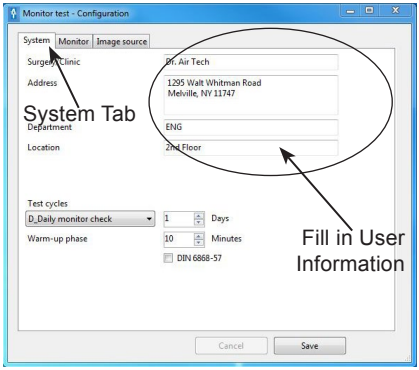
Performing the Monitor test Configuration is only necessary when a monitor is used for the first time. Proceed to 11.3 if the monitor has been previously configured.

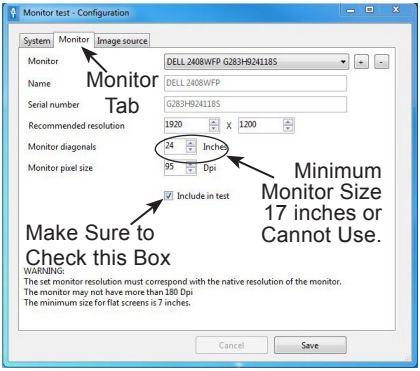
DBSWIN must be registered before the Display Monitor Manual Test can be run. The Checks tab is not functional when DBSWIN is unregistered.

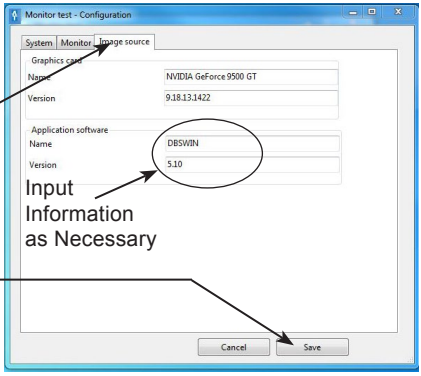
11.2 Monitor Configuration

1. Make sure that DBSWIN has been registered.
2. Go to the Checks tab of the Main window and open the drop down menu.
3. Select Monitor test and observe that the Monitor test Configuration window opens.
4. Complete inputs for all three tabs of the Monitor test Configuration window and select Save as shown below.
5. Observe that the Monitor test window opens. Proceed to 11.3, step 4, to perform the test.





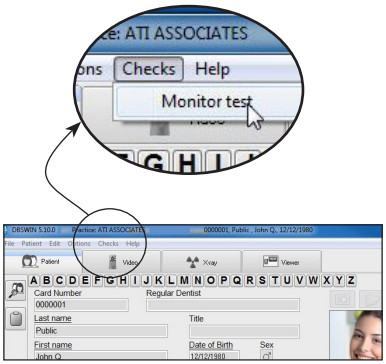


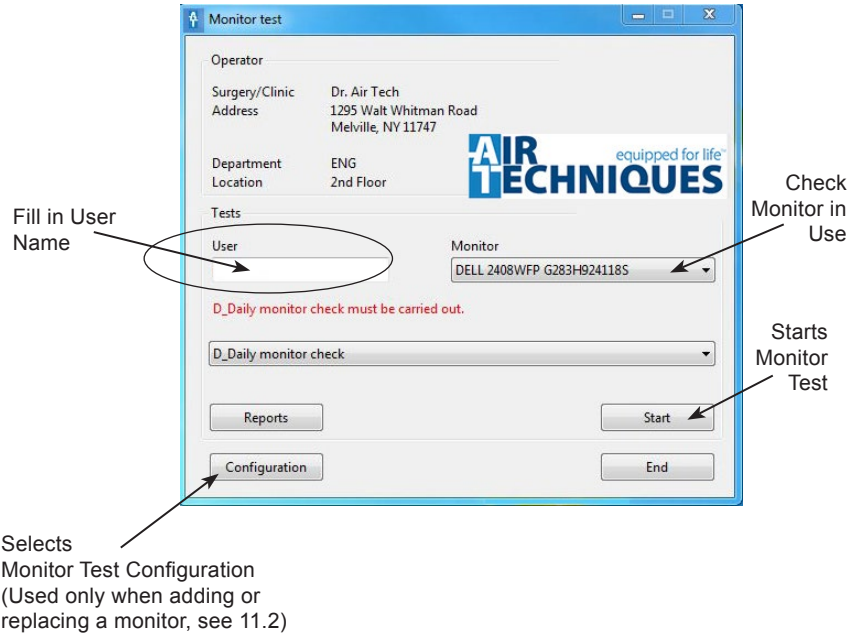


DBSWIN must be registered before the Display Monitor Manual Test can be run. The Checks tab is not functional when DBSWIN is unregistered.

11.3 Monitor Test

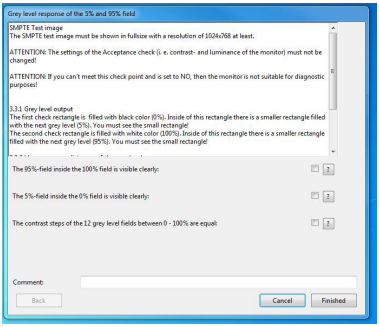
1. Make sure that DBSWIN has been registered.
2. Go to the Checks tab of the Main window and open the drop down menu.
3. Select Monitor test and observe that the Monitor test window opens.
4. Fill in User Name field of the Monitor test window.
5. Select the monitor to be tested.
6. Click Start and proceed to step 7 and continue test.



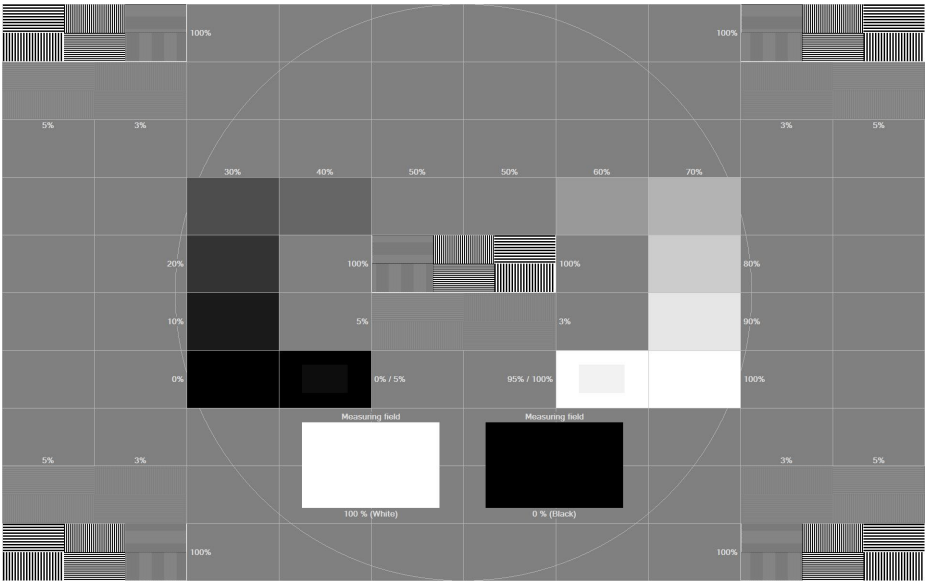


Make sure that a user name has been entered into the User field. The Start button is not functional when there is no user name and the Monitor test cannot be run.

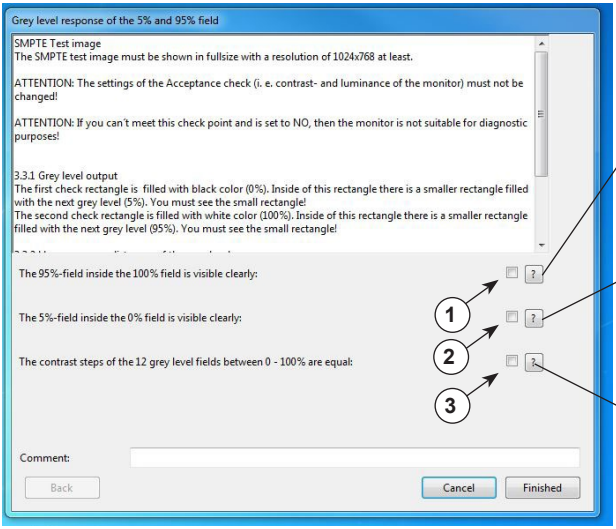
7. Observe that the SMPTE test image opens along with the Grey level response window.
8. Review the information provided by the Grey level response window.
9. Select (one at a time) each of the three question mark boxes in the lower right of the Grey level response window and review the resultant image.
10. Check that the monitor under test displays each of the images shown for each of the three question mark boxes. Check the corresponding box to verify.

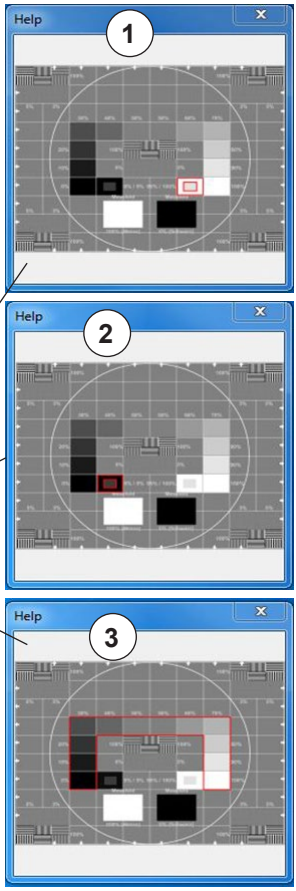


Grey Level Response Window

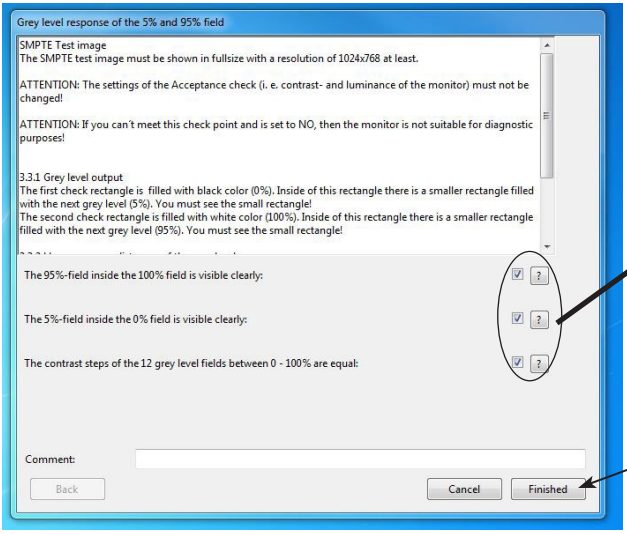


SMPTE Test Image





Check The Corresponding Box To Verify Image.



Select Finished to return to the Monitor test window

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