PSPIX

TWAIN interface

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Quick description of the TWAIN standard

About the TWAIN consortium:

The TWAIN Working Group is a not-for-profit organization which represents the imaging industry. TWAIN's purpose is to provide and foster a universal public standard which links applications and image acquisition devices. The ongoing mission of this organization is to continue to enhance the standard to accommodate future technologies.

The TWAIN consortium does not market any software, hardware or other products. It has a website at http://www.twain.org/ on which you can find a wealth of practical information for people who want further information on the subject.

The TWAIN standard exists for Windows and Macintosh platforms. Only Windows is covered herein. At the present time, there is no Macintosh version of the TWAIN interface for PSPIX.

The TWAIN standard allows total interconnection of software and peripherals. However, software and peripherals are not obliged to comply with the entire standard; so there can be partial or complete incompatibilities in some cases.

Installation of the TWAIN interface for PSPIX

Installation is made as simple as possible. Run the file '**TWAIN PSPIX1 Setup.exe**'. A message will inform you when the installation is finished.

NOTE

Device drivers are also installed. At the end of the installation, you need to restart your computer.

WARNING

Before installing this TWAIN interface, you must uninstall any previously installed PSPIX driver or PSPIX TWAIN driver.

Description of the TWAIN interface for PSPIX

PSPIX Control

The PSPIX Control panel is the dialog box that gives you an on-screen display showing the PSPIX system status and the mode for positioning the phosphor plate in the mouth.

A -System status

Two indicators display on-screen, the upper one is green, the lower one can be yellow/blue/red. Three possibilities are offered:

- When the system is connected, the green indicator is continuously illuminated and the yellow indicator blinks. This indicates that the system is waiting to acquire data.


- While the image is being retrieved, the green indicator light and the blue indicator light remain permanently lit.

- The red indicator light goes on when software detects an abnormal occurrence as shown below :

This error is due to a connection issue between PSPIX and the computer (network connection with PSPIX not configured or incorrect, Ethernet cable disconnected, PSPIX OFF).

B – Image orientation
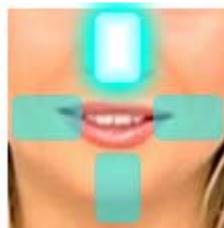
This feature allows you to select the orientation of the image sent to the imaging software. To do this, simply click on one of the 4 positions before inserting the phosphor plate in the PSPIX system.

<u>C – Closing PSPIX Control</u>

The button closes the PSPIX Control once the phosphor plate scanning is finished. Some software closes the TWAIN interface itself after acquiring an image. Other software leaves the TWAIN interface open until the user decides to quit.

Setup window

Click the button to access the Setup window.
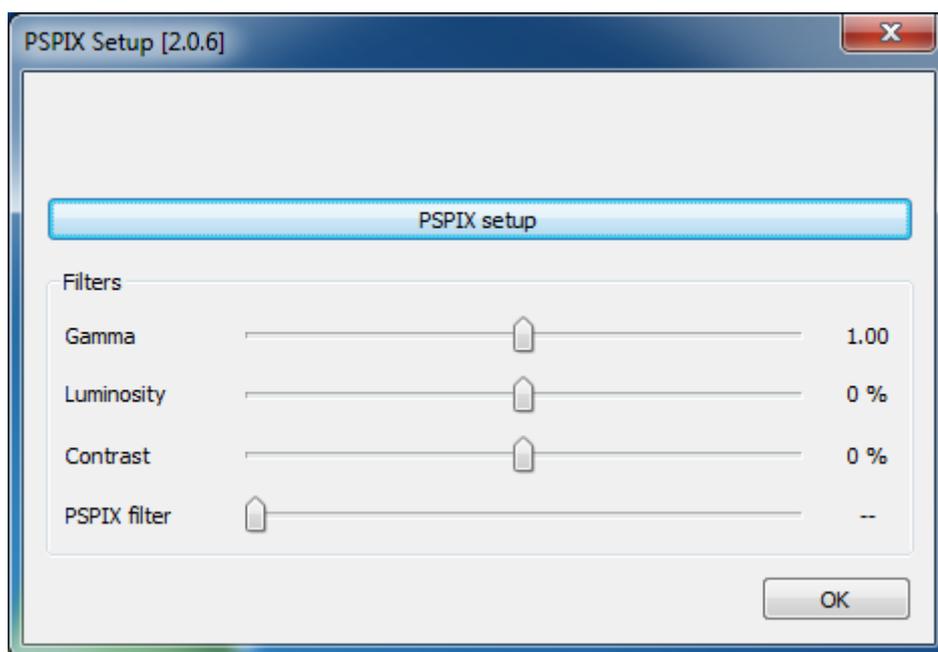
The Setup interface is simple and intuitive. It is divided into four separate parts:

1. The title bar contains the words "PSPIX Setup" and the version number of the acquisition module. If you see any other words, it means that you have another version of this TWAIN interface (for which this documentation was not written). Or, you have enabled the TWAIN interface for another hardware device.

2. The "PSPIX Setup" button. The very first time you use PSPIX, you need to proceed to its setup (see chapter PSPIX Setup).

3. **Filters** group: When acquiring an image, it is possible to automatically apply different enhancements.

    <u>Apply a gamma</u>:
    This function allows you to increase or decrease the gamma. You just have to slide the cursor on the left/right axis, with a scale from 0.34 to 3. By default, this filter will be applied to each acquisition.

    <u>Apply a luminosity</u>:
    This function allows you to increase or decrease the luminosity. You just have to slide the cursor on the left/right axis, with a scale from -100% to +100%. By default, this filter will be applied to each acquisition.

<u>Apply a contrast</u>:
This function allows you to increase or decrease the contrast. You just have to slide the cursor on the left/right axis, with a scale from -100% to +100%. By default, this filter will be applied to each acquisition.
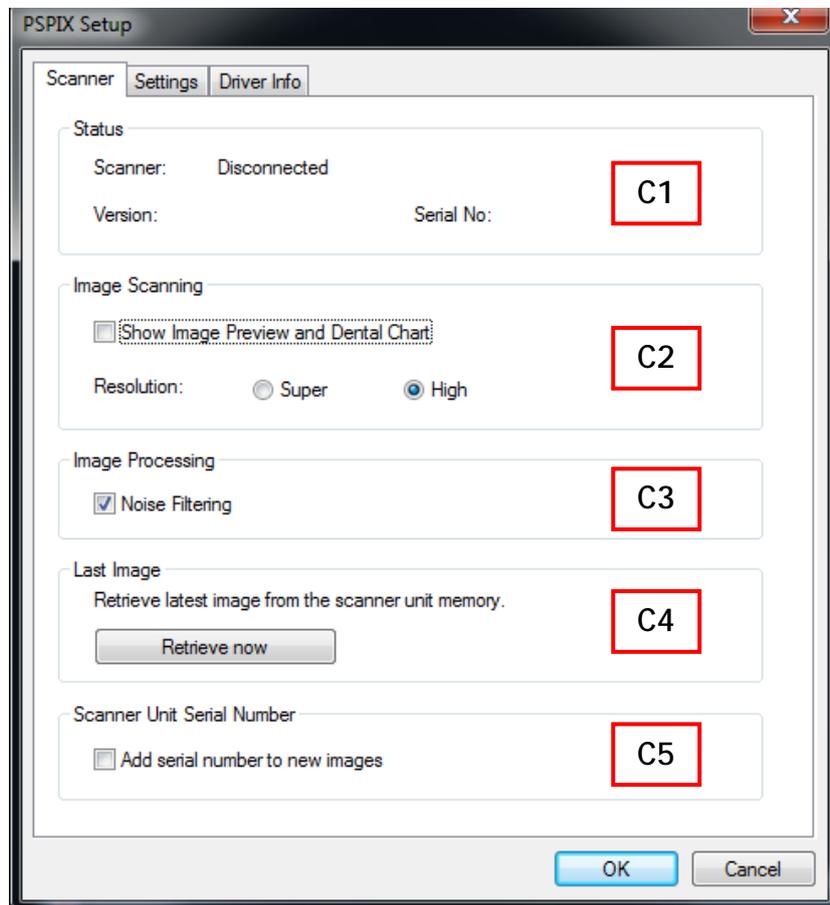
<u>PSPIX filter</u>:
You can increase or decrease the filter intensity.

4. The upper right corner "close button" allows you to cancel the modifications and quit the Setup interface.

⬚ NOTE

For each filter setting, right-clicking the cursor bar resets the value by default.

PSPIX Setup

Scanner tab

C1- "Status"

The heading "Status" indicates if the system is connected, its firmware version and its serial number.

C2- "Image Scanning"

The "Show Image Preview and Dental Chart" check-box is an obsolete function retained in order to preserve ascending compatibility with older systems.

Choose the image resolution. To do so, click on "Super" for very high resolution images or "High" for high resolution images.

C3- "Image Processing"

The "Noise filtering" check-box enables you to apply an anti-noise filter to the images.

C4- "Retrieve last image"

Following a communication fault (e.g. PC crash or network problem), the last scanned image cannot be transmitted to the software. However, it can be retrieved afterwards.

🖎 NOTE

> The LAST scanned image can only be retrieved if the PSPIX system is running. This means the X-ray will be lost if the PSPIX system has stopped operating.

To retrieve the last image:

1. Remedy the problem which led to the communication fault.

2. Hold down the "CTRL" key and click on the yellow indicator of the PSPIX Control.

3. The "PSPIX Setup" window is displayed. Click on the **Retrieve Last Image** button to retrieve the last scanned image.
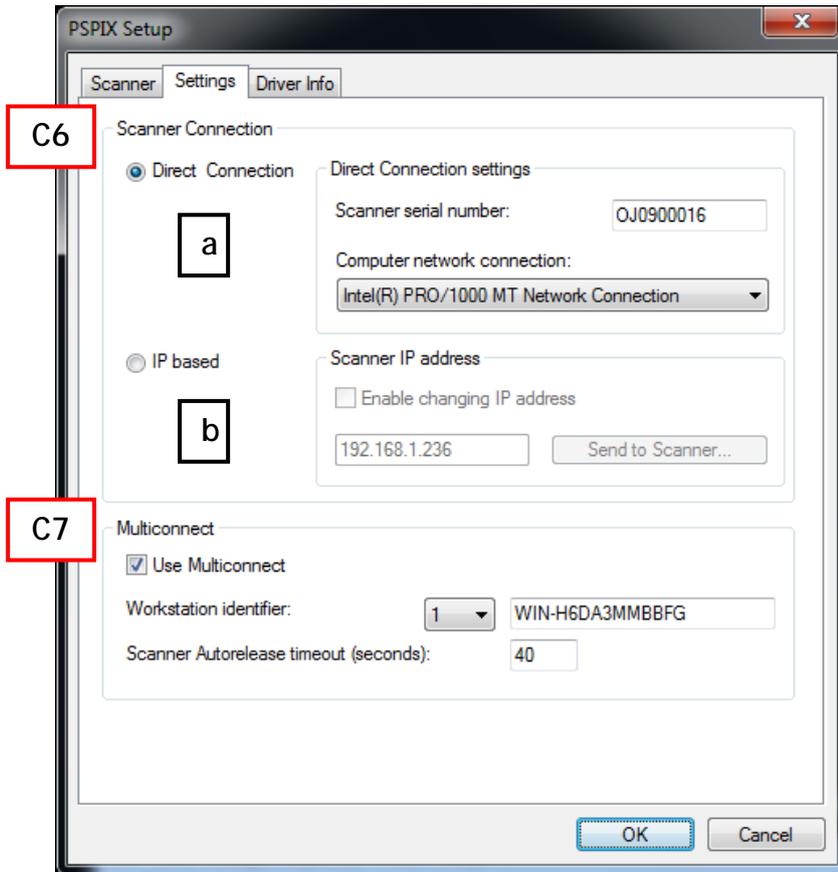
🖎 NOTE

> If necessary, select different parameters (e.g. the resolution) before retrieving the X-ray.

4. Click on **OK** to close the window. The last scanned image is displayed in the imaging software.

C5- "Scanner serial number"

The "Scanner serial number" check-box allows you to display the serial number of the PSPIX system on all X-rays.

Settings tab

C.6- *"Scanner Connection"*

To configure a PSPIX system, you need to find out the type of connection being used. To do this, apply one of the following two rules:

! WARNING

This phase is essential for establishing communication between SOPRO Imaging and a PSPIX system.

a -*"Direct connection"*

This type of configuration allows you to set up a network connection by simply providing the serial number of the PSPIX system. In "scanner serial number", enter the serial number of the PSPIX system, then select under the heading "Computer network connection" the network interface card of the computer to which the PSPIX system is connected.
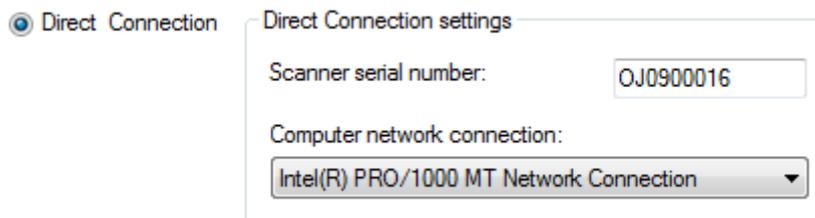
When this is done, click on "OK".

 NOTE

Please refer to section C7 of this chapter for multi-user connection.

Or

b - "IP Based"

This type of configuration allows you to connect to the network by entering the IP address of the PSPIX system. In the "Enable changing IP address" box, manually enter the IP address of the PSPIX system.

 NOTE

The IP address of the PSPIX system is displayed on the preview screen on startup.

It is possible to change the IP address of the PSPIX system. To do this, manually enter the desired IP address.

To ensure the change takes effect, first keep the button pressed (located on the front of the PSPIX system) and click on the "Send to Scanner" button.

The PSPIX system will then validate the change of IP address with an audible beep and restart automatically.

When this is done, press "OK".

 NOTE

Please refer to section C7 of this chapter for multi-user connection.

 WARNING

IMPORTANT: The PSPIX system and the computer must be on the same network address range. Also check that the IP address chosen for the PSPIX system is not already in use.

 NOTE

It is advisable to use an "IP Based" IP connection in the following cases:
• Network of more than 20 computers
• Wifi network
• Failure of "Direct connection" method.

To share the PSPIX among multiple users, check the "Use multi-connect" box.

Select the identification number of the workstation in the "Workstation identifier" combo-list. The computer name is automatically displayed, but can also be changed if needed.
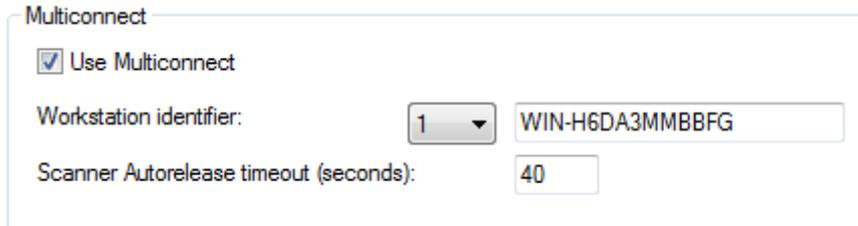
The "Scanner Autorelease timeout (seconds)" function corresponds to the time (in seconds) a PSPIX is reserved before automatically be released.
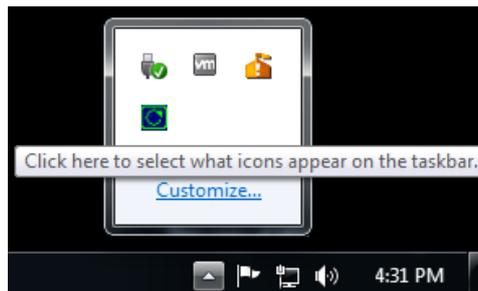
When finished, click on "OK".

To reserve a PSPIX system, click on the **green** multi-connect icon on the far right side of the taskbar.
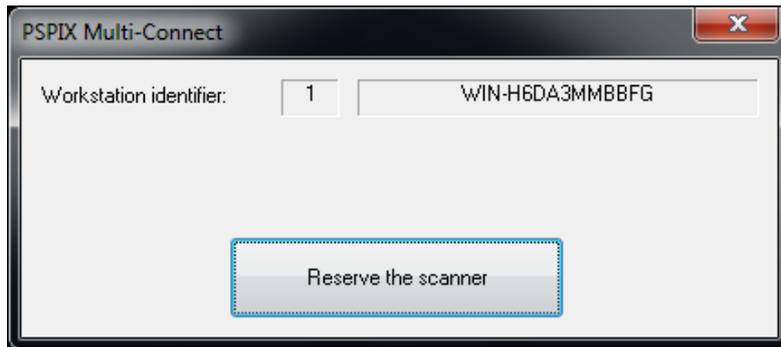

 NOTE

Windows 7 does not display the multi-connect icon by default. In the far right side of the taskbar, click on and click **Customize**... Select '**Show icon and notifications**' for the PSPIX multi-connect icon.

The following window opens, click on "Reserve the scanner" to reserve the PSPIX system.

Note that the configured Workstation ID and name are mentioned.
The multi-connect icon flashes, indicating that the PSPIX system is reserved and can be used.

 NOTE

If the multi-connect icon is **yellow** , this means the PSPIX system is already reserved by another

user.
Hovering this icon displays a pop-up message indicating the name of the computer having reserved the PSPIX.

 NOTE

If the multi-connect icon is **grey** , this means the PSPIX system is not switched on, or it is in the process of starting and is not yet ready to be used, or not properly configured.

To cancel reservation of the PSPIX system, click on the green multi-connect icon then on "**Free the scanner**".

Driver Info tab

C.8- "Driver Info"

The "Driver Info" tab indicates the version number of the driver used by the PSPIX system.
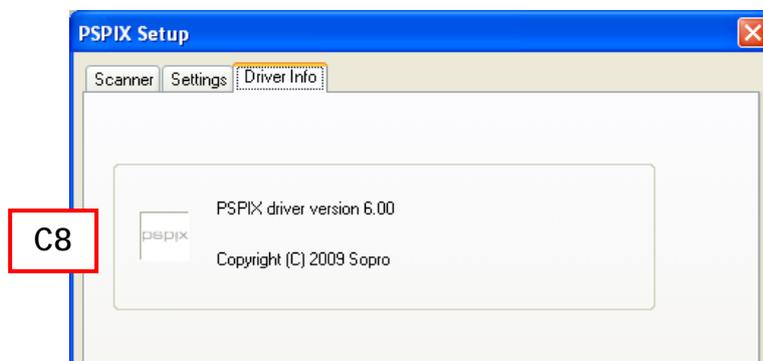
Acquisition procedure

You should carefully read the usage instructions supplied with our PSPIX system before using it and you can refer to this documentation herein if you are in doubt or need further information.

Once the PSPIX TWAIN interface is open, the yellow LED should blink. If this is not the case you should check that your PSPIX system is correctly connected to your computer, that the peripheral's drivers are correctly installed, that the network connection with the PSPIX is correctly setup and that no other application is trying to communicate with the PSPIX system.

If the yellow LED still does not blink after checking all these things, then refer to the PSPIX documentation for help on resolving the problem.

IMPORTANT: X-rays are dangerous, so carefully comply with the recommendations of the manufacturer of your generator and timer, and comply with all safety instructions pertaining to radiology in your professional environment.

Example of using interface

Below is a procedure example in order to acquire images from PSPIX system with Twacker.

Twacker is an application to test TWAIN driver features. It can be downloaded from the website http://www.twain.org/

Open the **File** menu, click **Select Source**… and select "TWAIN PSPIX 1 1.0" source.
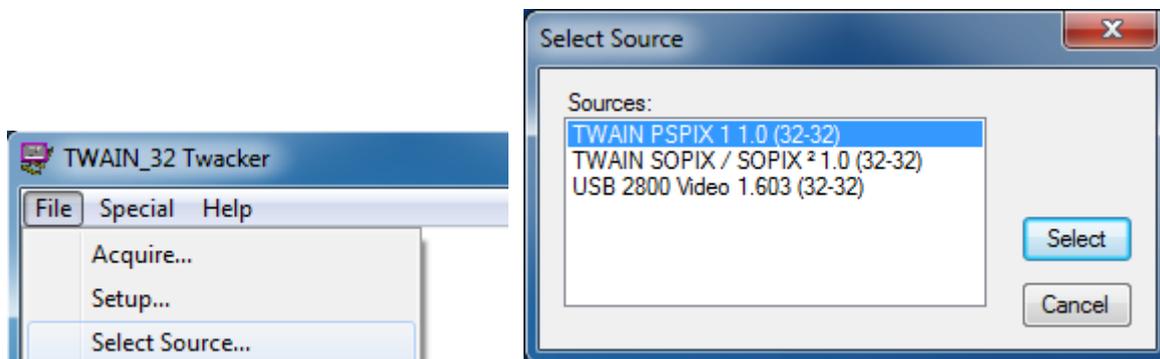
Then, return to the **File** menu and click **Acquire**… The PSPIX TWAIN interface will be displayed and you will be able to acquire x-ray. Note that Twacker will automatically close the TWAIN interface after each acquisition.

For any use of the PSPIX TWAIN interface into other software, please refer to its user manual.