

DC-Air™ Setup Guide

Introduction

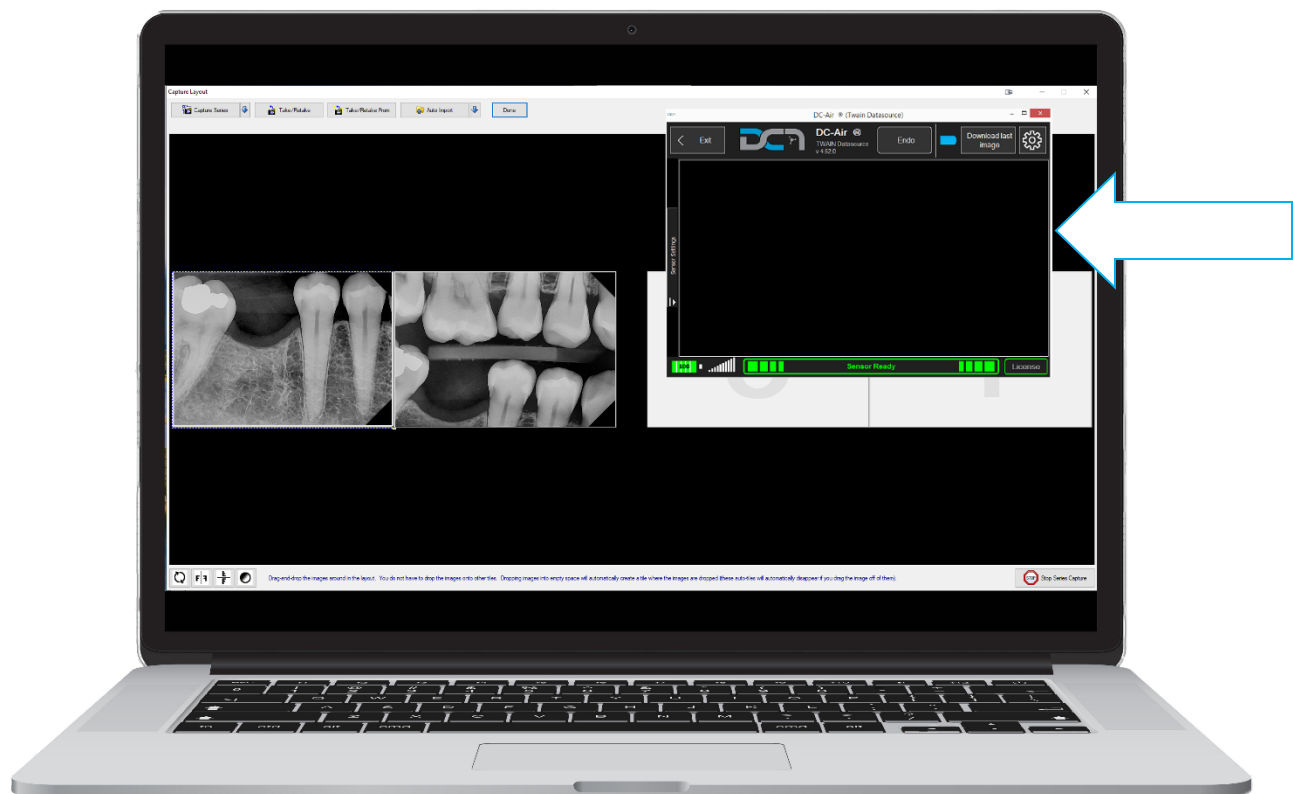
The DC-Air™ *TWAIN* Software is required to use and capture intraoral x-ray images.

It will interface with the existing Image Management Software (IMS). For some Image Management Software, additional modules or components may be required to allow the Image Management Software to link with *TWAIN* applications. Please ensure your IMS is configured to interface with a *TWAIN* source.

Expanded instructions for use of the *TWAIN* interface can be found at: <https://www.ftgimaging.com/support>

In this guide we will discuss all steps for installing the DC-Air™ *TWAIN* software on an acquisition PC.

(PC not included)



Instructions to Follow

- Verify Computer Requirements
- Assembly of the DC-Air™ Docking Station
- Placement of the DC-Air™ Docking Station
- Install DC-Air™ *TWAIN* Software
 - Download at <https://www.ftgimaging.com/support>
- Opening the Software for the First Time
- Software Navigation
- Cleaning and Disinfection
- Operation Cliff Notes
- Review Training Video(s) on Use of DC-Air™ Holders
- Troubleshooting Highlights

Verify Computer Requirements

The required client PC specifications should meet or exceed:

- Microsoft Windows 10 Professional (32-bit or 64-bit)
- Intel i5 processor, 6th Generation or newer
- 4 GB of RAM
- 10 GB hard drive space
- 1 (one) USB 2.0 port
- An active Internet connection
- A monitor display resolution of 1920x1080 pixels 24bit RGB Full High Definition.
- Image Management Software
 - The respective Office software must be installed to be able to bridge via *TWAIN* with

Assembly of the DC-Air™ Docking Station

Locate the DC-Air™ Docking Station, antenna, and the USB-A to USB-C cable provided. Plug in the USB-C connector on the backside of the dock, and screw in the antenna firmly. Then plug in the DC-Air™ Docking Station into the computer. It is recommended to plug in to the back of the computer, similar to the use of a mouse or keyboard. Using the “Set it, and forget it” concept; if plugged into the front of the PC, it is more likely considered to be accidentally unplugged with other devices.

[Important] It is recommended that each DC-Air™ Docking Station should not move around and should stay with its respective computer to avoid wear and tear on the cable.



The DC-Air™ Docking Station when plugged in will flash blue two or three times before going dark. When a DC-Air™ Wireless Sensor is docked, it will then start to **pulse blue** indicating a charging status.

[Note] If a DC-Air™ Wireless Sensor is placed onto the DC-Air™ Docking Station before getting plugged into the computer, it will not start to **pulse** until the sensor is removed and then placed back on.



[Recommended] The DC-Air™ Wireless Sensor should be docked for a continuous 1-hour to allow charging before first use.

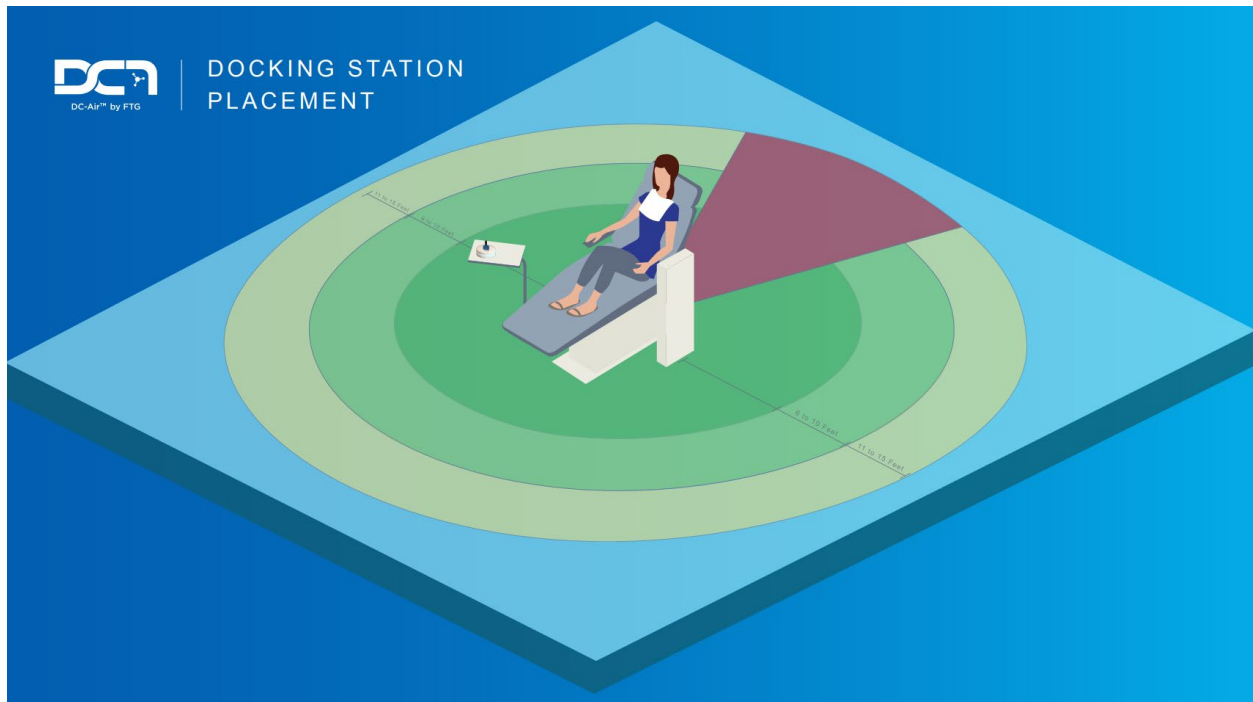
Placement of the DC-Air™ Docking Station

The signal strength between the DC-Air™ Wireless Sensor and the DC-Air™ Docking Station uses Bluetooth®. It does not use the Wi-Fi network; however, it does use the same frequency (2.4 GHz). There are variables that can be controlled (or avoided) to reduce interference and help maintain the signal strength.

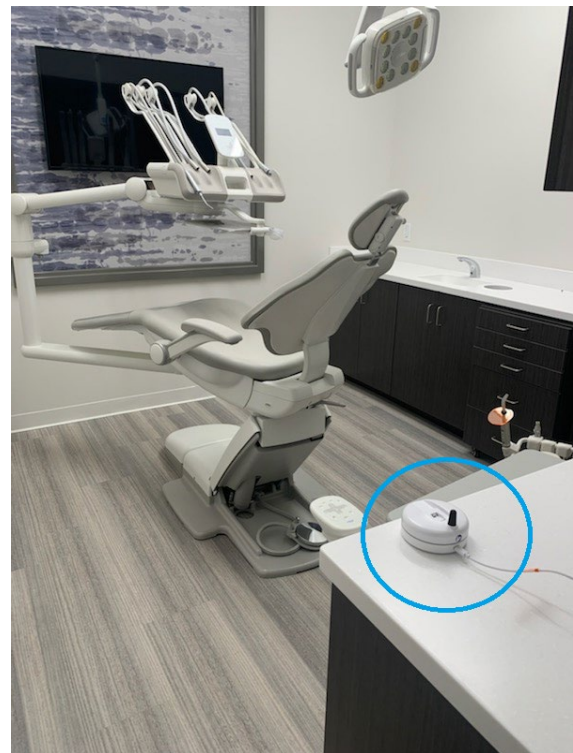
The Docking station should be placed on the countertop (if at all possible) in front of or to the side of the patient chair within 6-9 feet of the patient's head. The strength of the connection will be taxed if the Docking station is directly behind the patient's head. If behind is the only position available, entertain placement on the outmost part of the countertop furthest from directly behind the patient's head.

Having other wireless devices can also deter the signal. In the event there are other devices (wireless keyboards, mouse, etc.), it is encouraged that the respective receivers are placed on the opposite side of the desk whenever possible.

The docking station should also not be placed next to a sink or where it could get splashed or a trash bin where it can be fumbled and fall in.



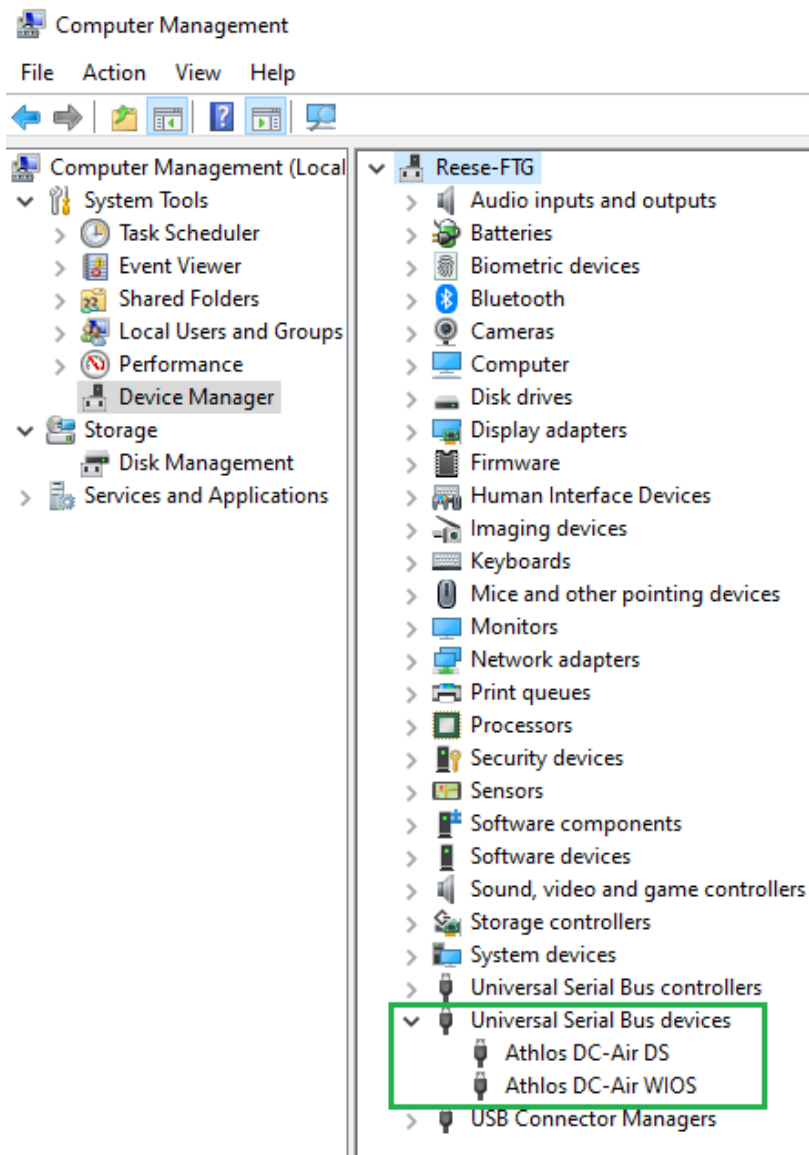
Examples of placement:



Install DC-Air™ TWAIN Software

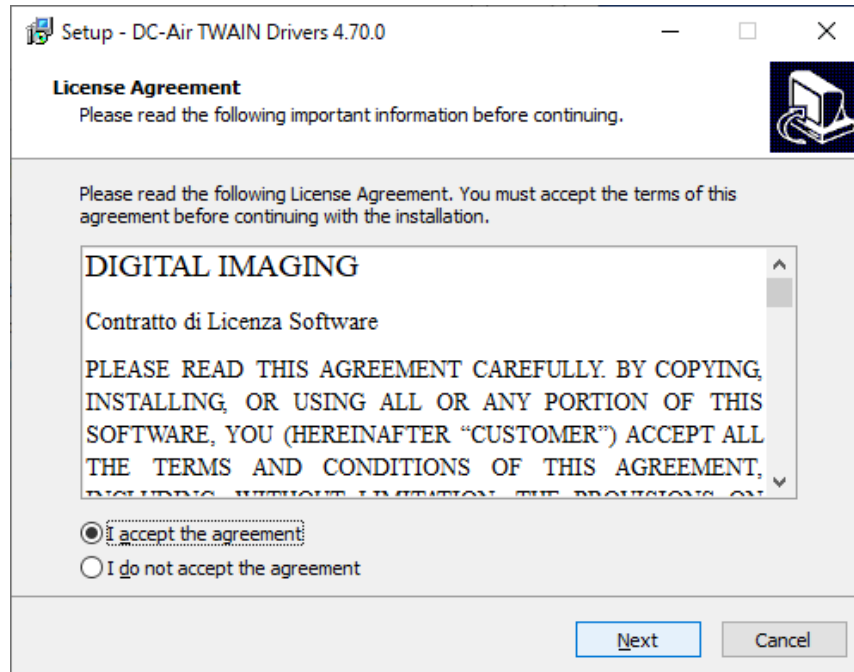
The DC-Air™ Docking Station, and the DC-Air™ Wireless Sensor (when docked) can both be seen in the Local Device Manager under the category, “Universal Serial Bus Devices.” It is not required to have the DC-Air™ Docking Station plugged in before the software installation, but it is required to use the software. The screenshot below is how the devices will show up in the device manager after the software & device drivers are installed. If the devices are not seen in the Device Manager list, follow the Troubleshooting Guide at the end of this document.

Report any problems to FTG’s support team by phone (855) 664-1953 or by emailing support@ftgimaging.com

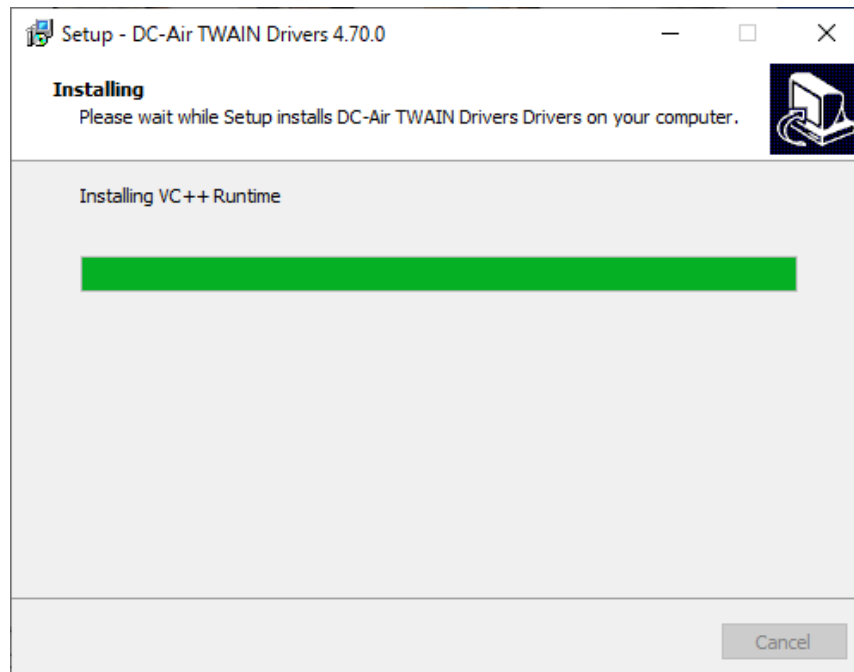


Next run the Application Installation for the *DC-Air™ TWAIN*. The software download can be found on the FTG website. <https://www.ftgimaging.com/support>

After reading the License Agreement, click the accept radio button, and then click Next



Allow the software to finish installing the files. The progress might pause briefly.



Click Finish to complete the software installation Wizard.



Advanced Info:

Directories to exclude from Anti-Virus protection or monitoring software:

C:\ProgramData\DC-Air\ (hidden directory)

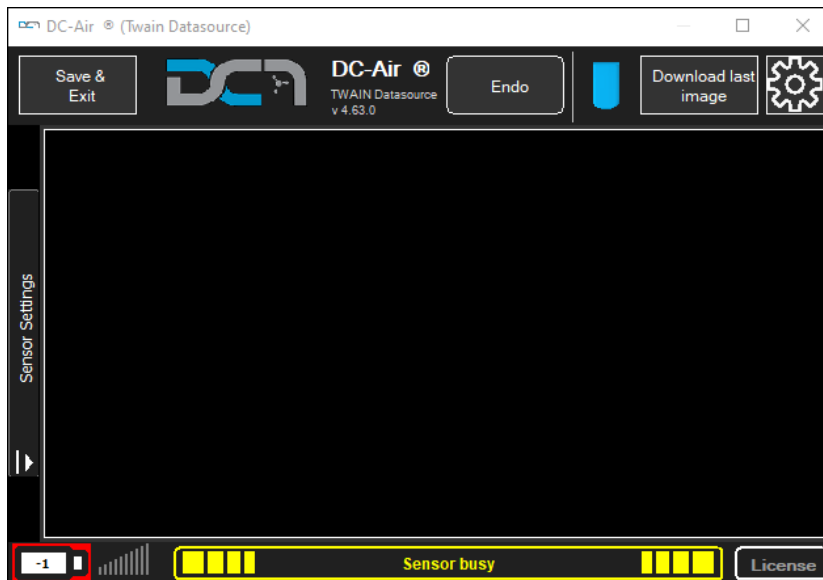
[Note] To bridge the DC-Air™ *TWAIN* with your Image Management Software, refer to their directions. As an alternative source, instructions and tutorial videos might be available under the FTG Imaging Support website.

<https://www.ftgimaging.com/support>

Opening the Software for the First Time

When the *TWAIN* software is opened for the first time it will start an automatic process of downloading a software license and calibration files for the sensor that is currently docked (estimated 60 seconds depending on Internet download speed). When changing to a different wireless sensor, allow 60 seconds docked with the *TWAIN* software opened to allow the program to download calibration files associated for the different sensor before undocking to use. This will need to be done on each computer workstation used with the DC-Air™ docking station. Here are screenshots of that process.

When first opened:

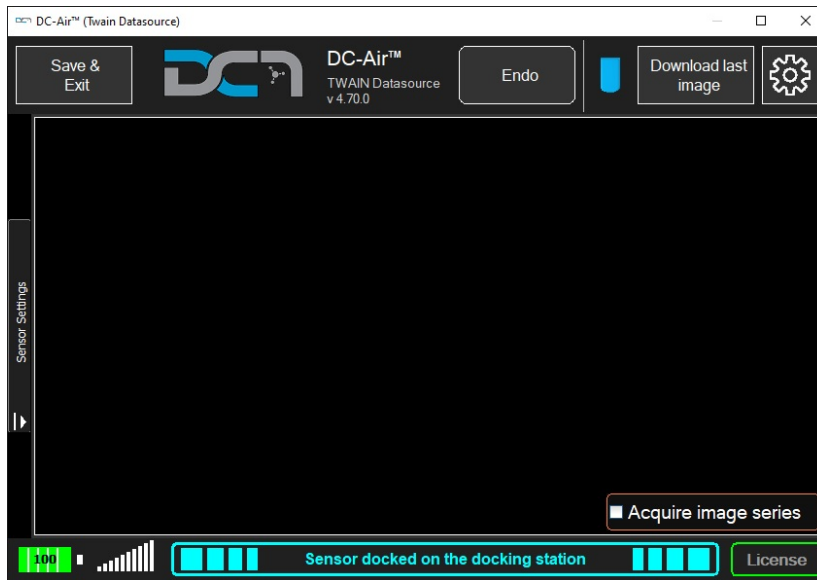


After a few seconds then...



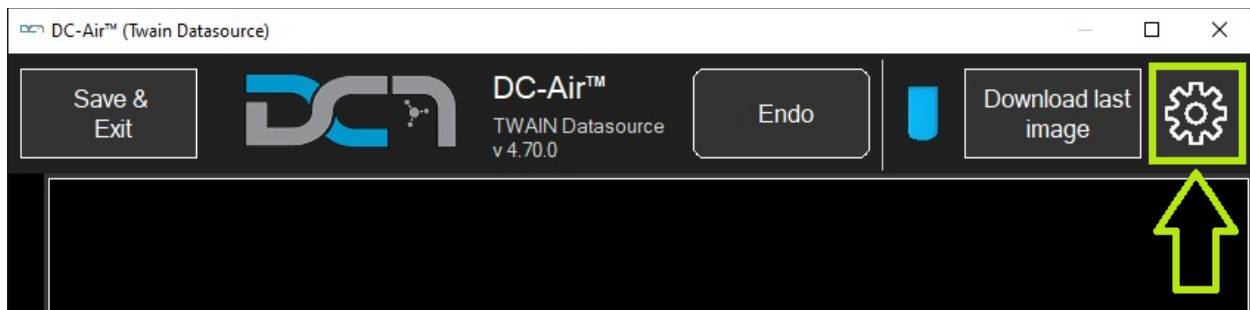
[Note] If this process fails, it is possible that the Sensor has not yet been activated.

Finally...



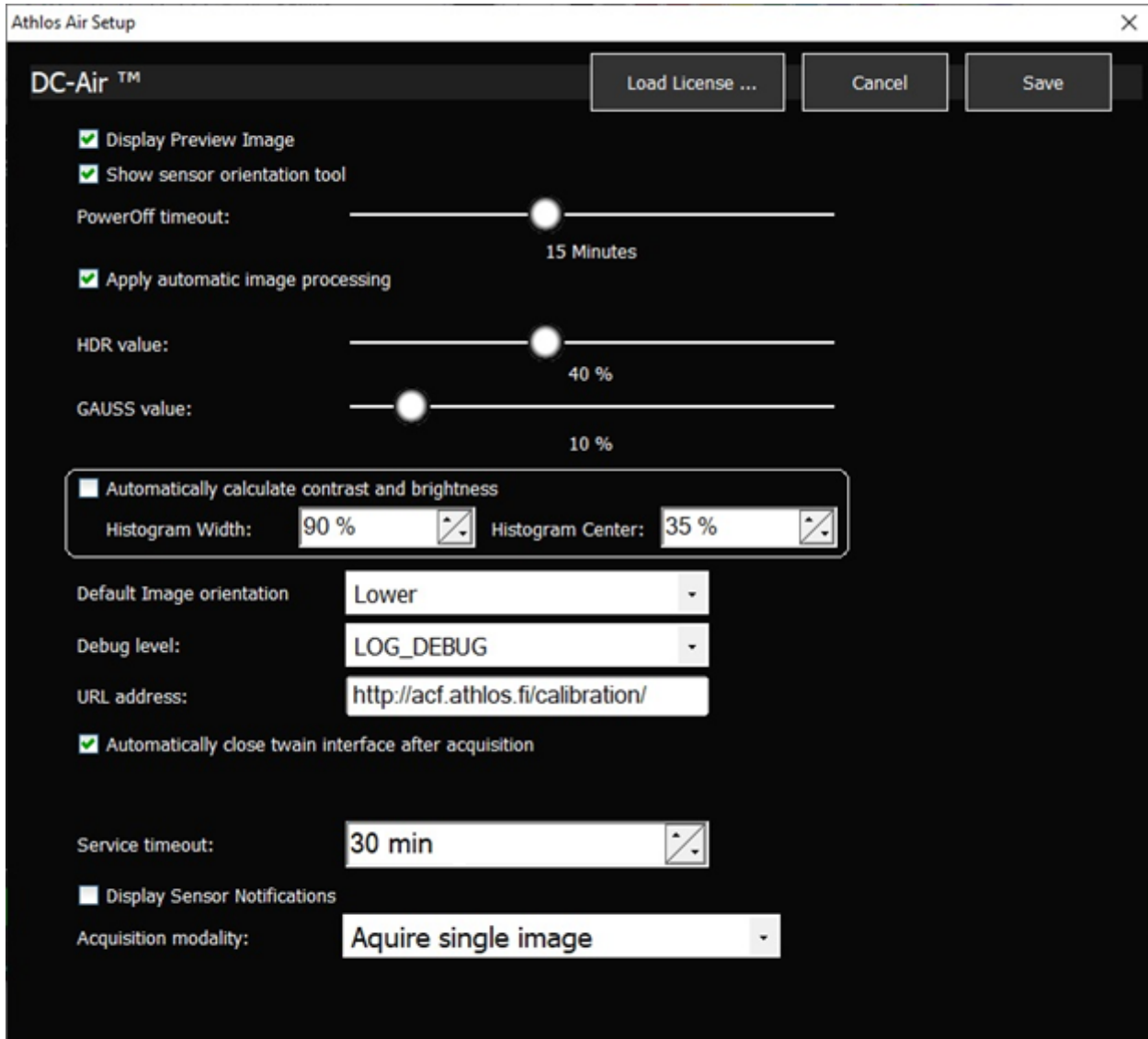
Optional: Verify or change the default settings

To open the settings, click the gear in the top right corner of the *TWAIN* window.



- Apply automatic image processing should be checked (matching following screenshot)
- HDR should be at 40%, GAUSS should be at 10%
- Automatically calculate contrast and brightness should be UNCHECKED
- Histogram Width should be at 90%, Histogram Center should be at 35%
- The Default Image orientation is relative to whichever layouts/templates are expecting
 - Change this orientation based on what the Image Management Software is expecting
 - Take some test images with different Layouts to verify
- Debug level should be set to LOG_DEBUG
- Automatically close twain interface after acquisition should be checked
 - Mostly helpful with capturing multiple images one after another with series/layouts
 - Uncheck this at the start to set contrast preferences, etc. Then re-enable.

- Service Timeout should be set to 30 minutes



Athlos Air Setup

DC-Air™

Load License ... Cancel Save

☒ Display Preview Image

☒ Show sensor orientation tool

PowerOff timeout: 15 Minutes

☒ Apply automatic image processing

HDR value: 40 %

GAUSS value: 10 %

☐ Automatically calculate contrast and brightness

Histogram Width: 90 % Histogram Center: 35 %

Default Image orientation: Lower

Debug level: LOG_DEBUG

URL address: http://acf.athlos.fi/calibration/

☒ Automatically close twain interface after acquisition

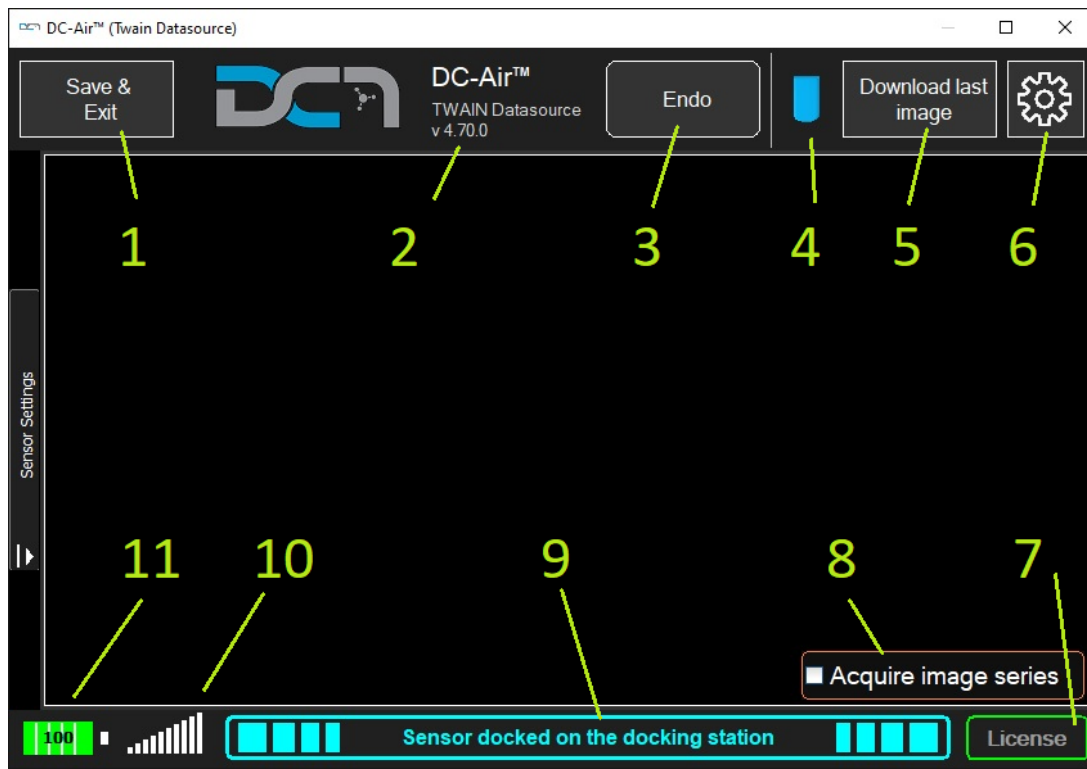
Service timeout: 30 min

☐ Display Sensor Notifications

Acquisition modality: Aquire single image

When done, use the Save button in the top right to close the settings window, then the 'Save & Exit' button in the upper left on the main window.

Software Navigation



1. Save & Exit – Saves the current image if not closed automatically
2. Software version used
3. Endo mode – Enable while the sensor is docked to temporarily ignore the sleep timer of the sensor. Click again while the sensor is docked to turn off.
4. Orientation/Rotation – force a specific rotation when saved. Typically only used on single captures. Layout/Template rotations are applied afterwards.
5. Download last image – Never retake an x-ray PA! Use the Download last image button to retrieve the last image taken from the sensor. Use this option to replace the last image received if it was incomplete or corrupt.
6. Settings button
7. License indicator – to see if the sensor connected has been activated
8. Acquire image series – ALTERNATE feature to ensure better compatibility when needed (i.e. to capture series of images with Eaglesoft Imaging)
Typically this checkbox will always be off or on depending on the *TWAIN* bridging compatibility with your imaging software.
9. Sensor Status bar – indicates where the sensor is or the status
10. Bluetooth signal – a visual indicator of the BLE signal strength
11. Battery level indicator – changes between 100%, 75%, 50%, 25%, and 0%

Cleaning and Disinfection

When cleaning the DC-Air™ sensor or the docking station, follow the cleaning and disinfection protocol described in this section.

Cleaning and Disinfection of DC-Air™ Sensor

Only use the approved disinfectants with DC-Air™ sensors. Using unapproved disinfectants may produce issues with the physical appearance of the product and potentially its operation.

The DC-Air™ sensor should be thoroughly cleaned after each use. The following cleaning and disinfection recommendations are intended to accomplish intermediate-level disinfection and will prepare the product to be safely used and reused during its life.

Approved Disinfectants

The following surface disinfectants have been found to be effective in achieving an appropriate level of disinfection and are available from dental product dealers:

Trade name:	Manufacturer:
CaviWipes™ (original)	Metrex Research (distributed by Kerr Dental)
ADVANTACLEAR Surface Disinfectant Wipes	Hu-Friedy Manufacturing Co Inc
OPTIM® 1 Wipes	COLTENE SciCan
Opti-Cide3® Surface Wipes	Micro-Scientific
Isopropyl (70%)	Multiple

Cleaning and Disinfection Protocol



DC-Air™ sensor must be cleaned and disinfected after each patient.



Always follow the instructions of the manufacturer of the cleaning and disinfecting wipe when disinfecting the DC-Air™ sensor.



Do not submerge the DC-Air™ sensor in any liquid at any time.
Do not autoclave the DC-Air™ sensor. Autoclave sterilizers will permanently damage the device.



The following procedure is recommended before using the sensor for the first time and after each patient:

1. Remove and discard all protective hygienic barriers and/or sheaths from the sensor prior to removing disposable gloves.
2. Place the sensor on a tray covered by a disposable liner, or in a receptacle that can be thoroughly disinfected.
3. Remove and discard gloves.
4. Wash hands and put on a new pair of disposable gloves.
5. If the sensor is visibly soiled (e.g., with blood or saliva), clean the sensor with a soapy cloth or paper towel or using a recommended disinfectant wipe and dry it with a clean lint-free cloth or paper towel.
6. Thoroughly wipe the sensor (min. 30 seconds) with one of the disinfecting products recommended above. Make sure that all impurities are removed, and the sensor is thoroughly disinfected. Use multiple wipes, if needed.
7. Repeat step 6.
8. Place the sensor on the docking station to allow charging.
9. Store the sensor and/or the docking station in a clean environment for the next use.

Cleaning of DC-Air™ Docking Station

The DC-Air™ docking station is not intended to be moved or to come in contact with a patient during clinical use. Accordingly, it does not require routine cleaning. If the DC-Air™ docking station becomes soiled or comes into contact with a patient, it should be cleaned using the cleaning agents recommended for the DC-Air™ sensor recommended above.

Do not wipe or press against the clips that hold the sensor onto the Docking Station. Avoid cleaning the center of the dock to avoid damage to the clips and to avoid cleaning liquid to leak into the electronics causing damage.



Do not submerge the DC-Air™ docking station in any liquid at any time.
Do not autoclave the DC-Air™ docking station. Autoclave sterilizers will permanently damage the device.

Sensor holders and related other items are to be cleaned and disinfected according to the instructions provided by the manufacturer of the holder and/or related items.

Sensor Barriers and Sleeves

Sensor barriers and sleeves (sensor covers) are disposable, and they must not be reused in any circumstances. Remove and dispose of the cover after each patient.



Operation Cliff Notes

Docking/Pairing - When placing a sensor on the docking station, wait 3-5 seconds for the status to change to **light blue**, Sensor docked, and be idle before picking the sensor back up. When taking ownership of a sensor from another room/computer, place it on the docking station in the new room that it will be used. Allow 5 seconds for the system to turn off the Bluetooth to unpair the sensor from the previous docking station/PC, and show 'docked' status. Picking the sensor up after idle time will then pair it to the new/current dock.

Acquiring/Trigger an X-ray - After taking an x-ray, the status bar at the bottom will change to **blue**, retrieving image/download image. This process takes roughly 6 seconds based on signal strength. If the progress bar is slow or stopped, remove the sensor from the patient's mouth to allow the sensor line-of-sight to reconnect, and finish downloading the image taken. If still slow, walk closer to the docking station so that the sensor is within 4 feet. If a connection cannot be established after 60 seconds, the software will display whatever information it has received thus far. Use the Download last image button to redownload if image is incomplete.

Do not place the sensor onto the docking station during an image transfer. Wait for the transfer to finish. If incomplete then use the download button, or place the sensor onto the dock before using the download button. The software can download the last image taken over wireless or docked, not interchangeable during the transfer.

Processing the X-ray - After the image is received over Bluetooth, the status bar at the bottom will change to **yellow**, processing of the image. This process takes roughly 6-8 seconds based on computer hardware speed. The software takes the image and will apply preset filters and then saves the image to the IMS. Feel free to take test x-rays of objects or of nothing except the sensor to watch this process. Repeat this process or by using the Download last image button.

Sleep Timer - If the Sensor goes to sleep from inactivity, the only way to wake the sensor is to place it back onto the docking station for 5 seconds. Take mention of the battery life to be aware if the sensor needs more time to charge. The inactivity timer restarts from when it last connected over Bluetooth or sent an image to the PC.

Battery Life - The battery life of the sensor when used in Endo mode can last roughly 3-5 hours. Every battery's potential is a little different.

If the battery of the sensor is depleted, it requires a minimum 20-25 minutes charge to be able to be used for a full 18-21 x-rays for an FMX series. To charge the battery to full from depletion takes roughly 1.5 hours.

If proper workflow is followed, docking the sensor to recharge in between exam sessions, then the battery life should never be a needed concern. Additionally, there is commonly a lunch period in which the sensor has time to recharge as well.

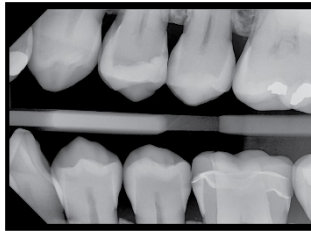
Review Training Videos on Use of DC-Air™ Holders

To help familiarize yourself with the use of DC-Air™ and the Zero Profile™ holder system, please review the training video(s) we have available on our website:

<https://www.ftgimaging.com/support>



1: DC-Air™ in Bitewing Holder



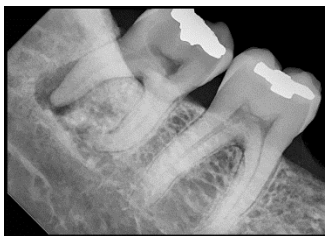
2: DC-Air™ in Anterior Holder



3: DC-Air™ in Posterior Holder



4: DC-Air™ in Endodontic Holder

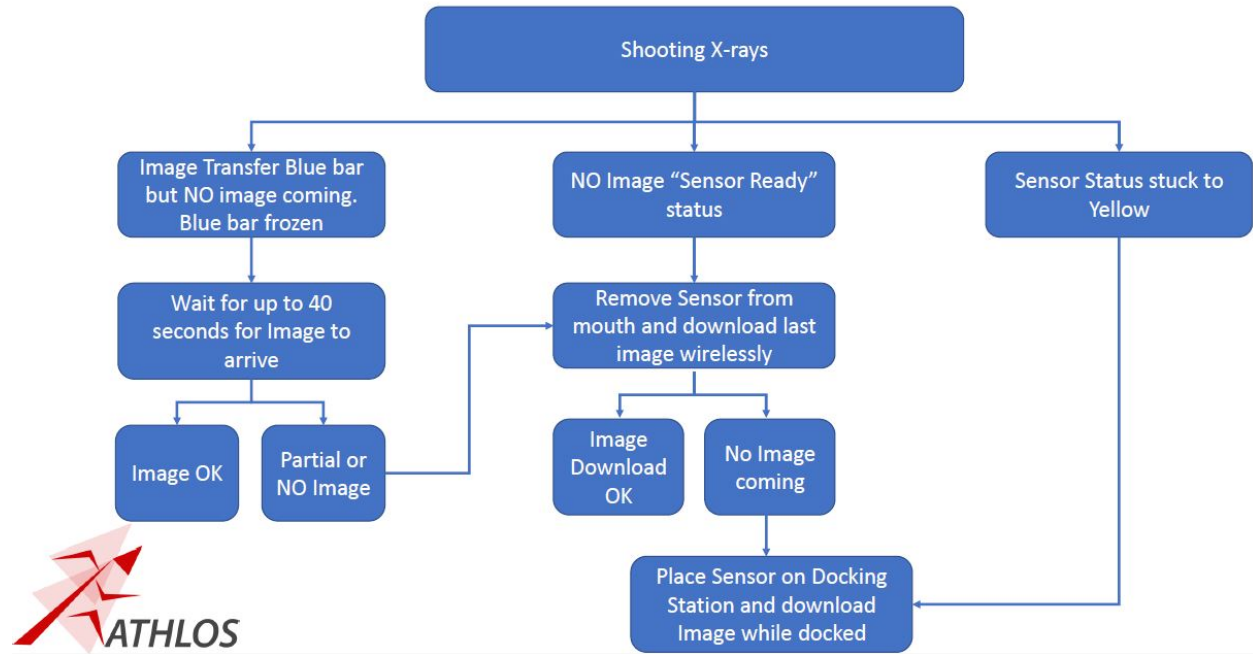


Troubleshooting Highlights

An Image was not returned when x-rays were emitted

- Follow the flow chart on how to retrieve the image that was taken

DC-Air™ Workflow Instructions in Scenarios Where an Image is Not Returned



The DC-Air™ Docking station does not show up in the Device Manager or the TWAIN software window closes automatically because it does not detect the docking station.

- Unplug and plug back in the device to ensure both ends of the cable are firmly placed.
- Try another USB plug/port, in the event one of them is not functioning.
- If available, replace the USB-A to USB-C cable with another (or from another room) to see if the results change

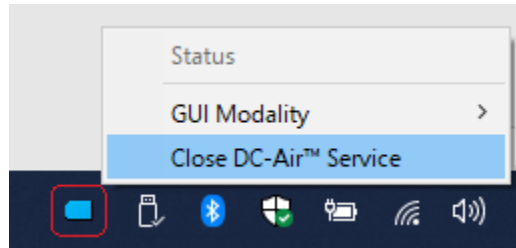
[Advanced] Have an IT person

Change the driver used by the operating system within the Device Manager, device properties (VID_0424 & PID_2532)

- Update Driver
- Browse my computer for drivers
- Let me pick from a list of available drivers on my computer
- Choose "Generic USB Hub"
 - USBHUB3 (usbhub3.inf)

If the Software appears frozen or is inactive and not responding to commands.

Right-click the tray icon for the DC-Air™ TWAIN software, choose Closer DC-Air™ Service. Then **Yes** on the confirmation pop-up. Next restart the acquisition process. Allow time for the sensor to connect to the docking station. Normally the sensor does not need to be docked to connect if recently done already. If required, the software status will state in [yellow] to place the sensor on the docking station to reconnect.



If the problem persists, a more elevated measure of a 'restart' is to unplug the docking station from the computer, typically where the USB-C connector plugs into the docking station.



This will power-reset the docking station, and in doing so, the software will recognize the docking station is not connected and close down. Expect the sensor to be docked again to reconnect to the software.

The DC-Air™ TWAIN software gives a status of “Sensor Drivers Error” or pop-up “error E06D7363”



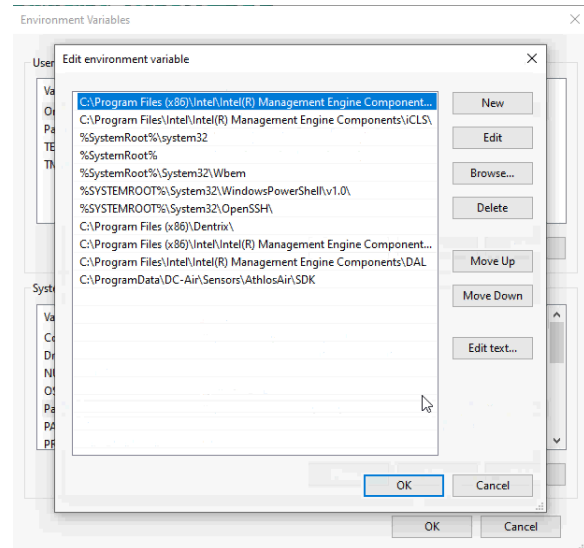
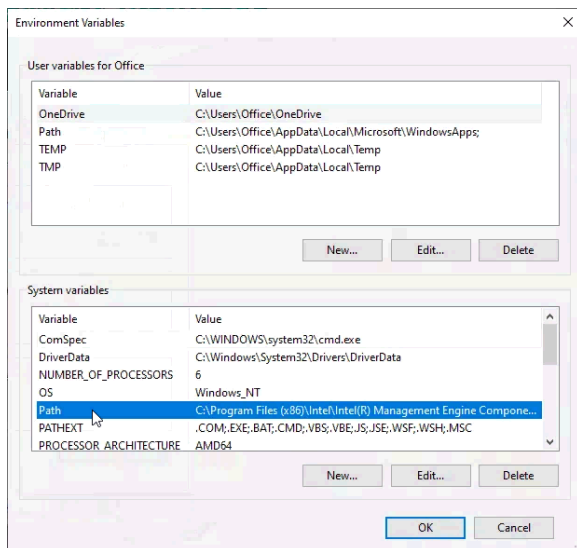
Try the following:

- Run the IMS with elevated privileges (Run as Administrator)
- Open the *TWAIN* from a local acquisition, and not a network program shortcut for comparison

[Advanced] Have an IT person

- Give access to run “C:\ProgramData\DC-Air\Service\ServiceApp.exe” as administrator
- Add the program directory to the system environment variables path.

C:\ProgramData\DC-Air\Sensors\AthlosAir\SDK



The Sensor/Software acquired an image before x-rays were emitted (image below)

The sensor’s sensitivity to light is too high, and should be lowered to be less sensitive. Call FTG support to make this change.



DC-Air™ by FTG

