Blue Sky Bio

The BIO | DS 3D Dental Scanner Instructions
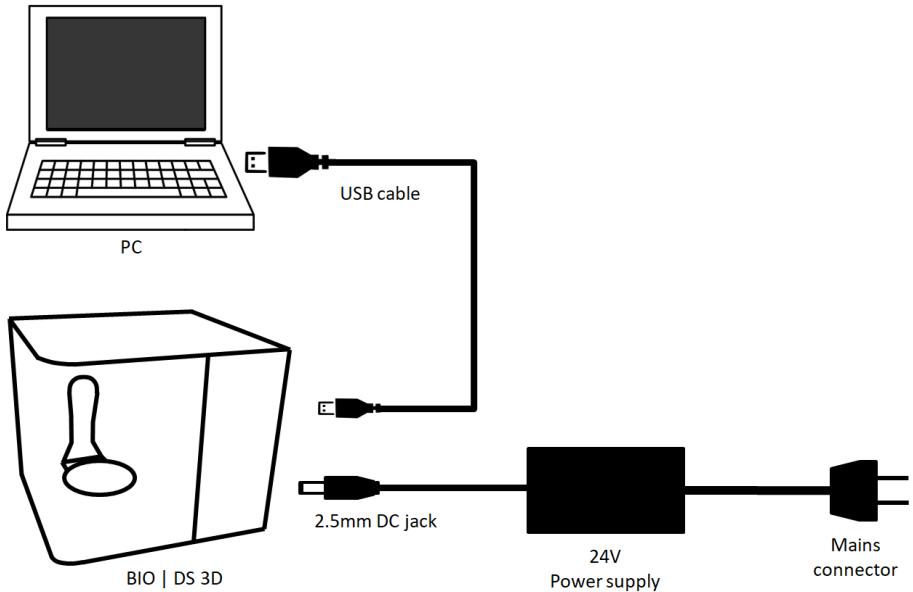
1). SET UP

a). Please set up the scanner hardware as shown in the diagram:

USB cable

PC

BIO | DS 3D

2.5mm DC jack

24V
Power supply

Mains
connector

- The transit bar must be removed.

b). Install the BIO DS scanner software on your PC.

- Please download from the Blue Sky Bio website, at the BIO | DS 3D Scanner page.

c). Switch on the scanner and start the BIO DS software.

- The scanner will take about 1 minute to initialize, after which the projector will shine blue.

d). Position your scanner so that no direct sunlight can shine onto the scan platform.

e). Please retain the hard case and transit bar, in case the scanner requires servicing or repair.

2). FOCUS AND CALIBRATION

Please focus and calibrate your scanner because it has been in transit which can affect accuracy.

> - On the PC, please select "Settings", "Focus", and follow the on screen guide.
> - Please select "Calibrate", and follow the on screen guide.

3). SCANNING

You may now make a dental scan:

a. (Optionally) Add patient information (such as the patient name, and notes). This will help to keep your scans organized.
b. Scan in the impressions or models that you have for that patient.
> - Select Impression or Models.
> - Click the type of impression or model that you have.
> - Follow the on screen instructions.
> - Repeat until you have scanned all that you wish to.
c. (Optionally) Align or crop your data.
d. Export your data either to 3D CAD files, or directly for a Lab Pronto order.

FURTHER INFORMATION

Please see the Blue Sky Bio website: BlueSkyBio.com

There are some excellent instructional videos on YouTube that can be found by searching for 'Blue Sky Bio DS-3D Scanner', (links are also available on the Blue Sky Bio website).

Overview

The BIO | DS 3D scanner can convert physical dental modals into 3D CAD files. The unit is low cost, portable, and easy to set up.

Model Types

- Impression moulds
- Stone cast models and dies.
- Articulated stone cast models.
- 360º Denture scanning.

Accuracy

- Scan repeatability: ± 20µm
- Improved sharpness and cross arch accuracy over version 2.
- Mesh density: approx. 0.25mm per dot.
- Operating temperature: 20ºC ± 5ºC

Scan time (typical):

- 1m 40s per stone cast
- 2m 20s per impression
- 3m 40s per denture.
- 5m per triple tray.

Hardware features

- 2 axis rotation stage.
- Scan volume: 80mm x 80mm x 60mm.
- Structured light projection with 2 x 8MP cameras.
- Dimensions (l w h): 24.6 x 25.8 x 22.5 cm (approx. 10" x 10" x 9")
- Weight (scanner only): <3.5 kg
- Storage temperature: 5ºC to 60ºC
- Operational in ambient lighting up to 1500 lux.

Software Control

- Automatic calibration.
- Output formats: PLY, OBJ (color), and STL.
- Automatic double sided capture of triple trays.
- Automatic alignment of upper and lower stone casts from an alignment scan.
- Optional shadow filling by adding extra scans from any viewpoint.
- Automatic mesh cleaning, hole filling, compression, and floating noise removal.

Minimum PC requirements

- Windows 10.
- 8 GB ram.
- 1280x720 screen.
- A graphics card that supports OpenGL 3.1

Note: Mac with "Windows Parallels" is not sufficient.

Power supply:

- Input Voltage: AC 110V – 240V, 50/60Hz, converted to 24V 3A 2.5mm DC jack.
- Converter supplied with UK, US, or EU plug.
- Power consumption: 40W typical.

POSITIONING MODELS

- When attaching the magnetic dental attachments, position the circular yellow and blue markers furthest from the projector.
- For impressions, and bite alignment scans, face the maxillary side towards the projector.

CARE AND MAINTENANCE

- The calibration plate is fragile and important; please take care not to scratch it. If necessary, wash in soapy water with a soft cloth. Do not apply alcohol.
- If the scanner optics have collected significant dust, you may use an air jet to remove the dust from the mirror, the cameras, and the camera covers.
- It is safe to move the motors whilst they are held stationary, (for example to straighten the calibration plate and level the table before calibration begins), however moving the position of the motors during a scan can cause the scan to fail.

UPDATES

Please check the Blue Sky Bio website for software and firmware updates:

- Your PC software is updated via download links in the website.
- Your scanner firmware may be updated by putting "firmware update codes" into the PC software.
- Please ensure that the US website is selected, and find the Bio | DS 3D Scanner page in the online store.

TROUBLE SHOOTING

Issue	Remedy
Loss of scanner connection.	You may restart the system as follows: • Turn off the scanner, wait 3 seconds and restart. • Restart the pc software. • Wait for the projector to shine blue and perform a scan.
Always unable to connect to the scanner.	1). Ensure you are using the original USB cable (made by JuiceBitz). 2). If using a desktop PC, use the USB socket that goes directly to the computer motherboard (usually at the back of the desktop computer rather than via extra USB sockets at the front panel). 3). Turn off VPN software. For example NordVPN will clash with the scanner connection to cause a connection error. 4). (Rare) It can occasionally happen that the Windows driver used by the scanner does not install automatically. The correct driver is called the "USB Ethernet/RNDIS Gadget" driver, which should be listed in "Device Manager", under "Network Adapters" – if not, please contact support for further information.
The projector does not come on or continually restarts, or freezes at a menu screen.	This could mean that the projectors internal battery is completely flat. It may build charge if left on for 20 mins or so. If not you may put the scanner into charge mode: • On the PC software, Click Settings, Advanced, Update. • For the hardware update code type "CHARGE MODE", and click update. • Now restart the scanner, the projector will not switch on thus allowing it to charge. • After about 30 mins, restart the scanner and it should boot correctly with the projector on.
High Ambient Light	If the ambient light is too high, the scanner will make a warning announcement at the start of the scan 'Ambient light too high, accuracy may be reduced'. This can happen with bright sunlight or rooms with many windows and skylights. Try positioning the scanner so that the model is shielded from strong window light.
Poor scan quality.	Re-focus or re-focus and re-calibrate the scanner. Out of calibration scanners can generate scans with a double image.

CONTACTING SUPPORT AND SERVICING

If the scanner is not behaving as you would expect, please freely contact us, as we would like to help.

Dr. Raymond Rophie, Clinical, lab and CAD/CAM support.
Email: raymond@BlueSkyBio.com, Tel: +1 305 469 2943

If returning for service please replace the transit bar and ship using the original hard case with all of the accessories.

SAFETY INSTRUCTIONS AND WARNINGS

To avoid hazards please do not:

- block the air holes (to avoid the risk of overheating).
- touch the motors as they can be hot.
- look into the projector beam.
- disassemble the device.
- allow the scanner to get damp or wet.

Please:

- always use the original power supply and usb cable.
- switch off the device when not in use for a long time.
- discontinue use of the scanner if it becomes damaged.
- be aware of the small magnets that hold the attachments to the turntable. Magnetic fields may interfere with data storage media, credit cards, and pacemakers.
- disconnect all cables from the scanner during an electrical storm to prevent damage to the unit.
- handle the unit and accessories with medical gloves, should you wish to minimize the risk from infectious disease.

COMPANY INFORMATION

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