Blue Sky Bio

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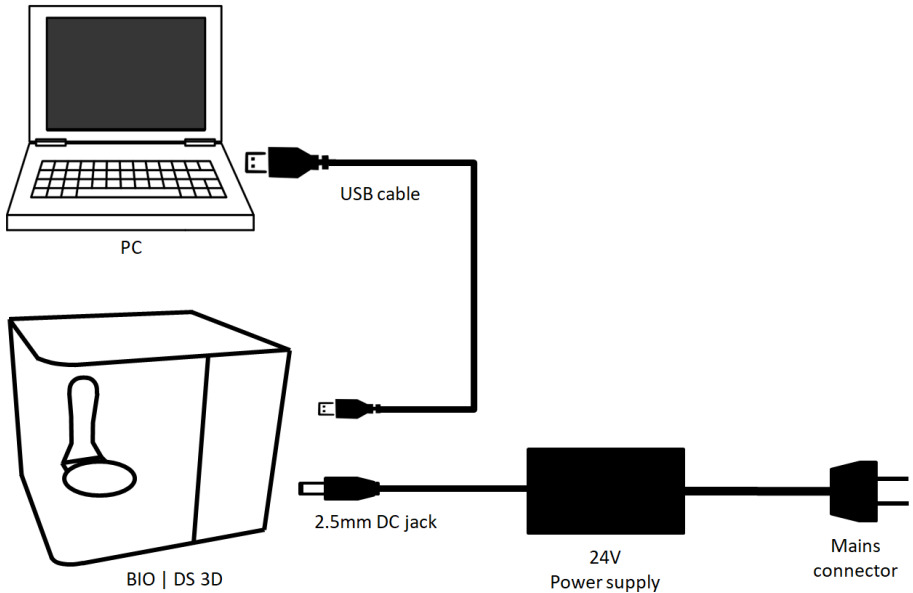
## 1). SET UP

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



- 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.

## 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

Or search for 'Blue Sky Bio DS-3D Scanner' on YouTube for instructional videos.

### 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.

### Accuracy

- Scan repeatability: +/- 25um
- Mesh density: approx. 0.25 mm per dot.
- Operating temperature: 20'C +/- 5'C

### Scan time (typical):

- 1m 30s per stone cast
- 2m 10s per impression
- 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: 5'C to 60'C
- Operational in ambient lighting up to 2000 lux.

### Software Control

- Automatic calibration.
- Output formats: PLY, OBJ (color), and STL.
- Automatic double sided capture of 2 sided impressions.
- Automatic alignment of upper and lower stone casts from an alignment scan.
- Optional manual alignment.
- 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

### Power supply:

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

## DENTAL ATTACHMENTS AND ALIGNMENT

When attaching the magnetic dental attachments, position the circular yellow and blue markers furthest from the projector.

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.

The magnetic dental holders are most easily and safely removed by sliding them sideways.

For impressions, and bite alignment scans, face the maxillary side towards the projector.

## CARE AND MAINTENANCE

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.

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.

## UPDATES

Please check the Blue Sky Bio website for software and firmware updates. Firmware updates may be released and these can be installed using the "Advanced" tab of the settings page. The update time depends on the size of the update but is typically 15 minutes. During an update the projector will show red and you must not turn off the scanner.

| Issue | Remedy |
|---|---|
| In case of loss of connection between the PC and the scanner | You may restart the system as follows: <br> • Turn off scanner, wait 4 seconds and restart. <br> • Restart the pc software. <br> • Wait for the projector to shine blue and perform a scan. |
| Always unable to connect to the scanner. | VPN networks can interfere with the scanner connection.  Please turn off your VPN if you are using one. |
| There is a double image in the scan, or poor scan quality. | Re-focus or re-focus and re-calibrate the scanner. |
| The projector does not come on or continually restarts. | 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: <br> • On the PC software, Click Settings, Advanced, Update. <br> • For the hardware update code type "CHARGE MODE", and click update. <br> • Now restart the scanner, the projector will not switch on thus allowing it to charge. <br> • 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. |

## 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.

## CONTACT

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