

i-CAT Scanning Protocol



Scanning Protocol for the i-CAT Scanners – For Use with iDent

General

This protocol is written specifically for users of i-CAT CBCT scanners.

- Patient Scan – with the template firmly fixed in the patient’s mouth, as instructed by the dentist.
- Dual Jaw Scans (where necessary): mandible and maxilla must be scanned separately.
- Radiographic Template Scan – appliance alone in a Styrofoam holder.
- Remove metallic objects such as jewelry and metal prostheses.

iDent Scan Parameters

i-CAT Classic

Use one of the following **iDent Protocols** installed on your i-CAT scanner (Figure 1):

- iDent Maxilla (6 cm, 20 sec)
- iDent Mandible (6 cm, 20 sec)

If the iDent protocol has not yet been installed, please use the following settings (Figure 2):

- Voxel: 0.4
- Scan height: 6 cm (mandible, or maxilla)
- Scan time: 20 seconds



Do NOT use the 10 second or 40 seconds scan

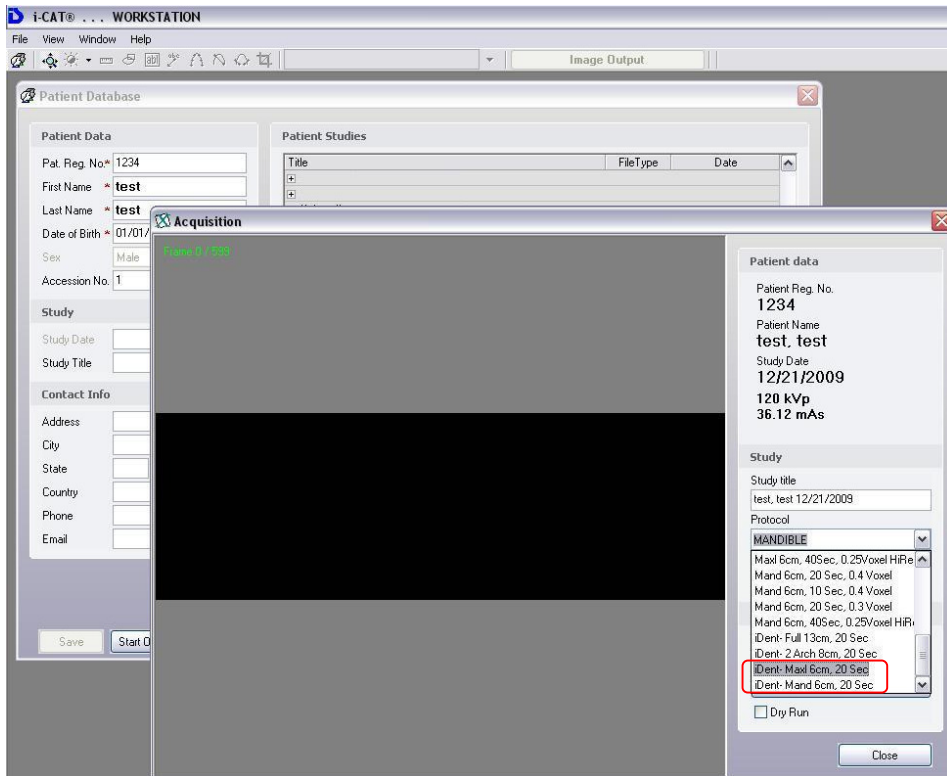


Figure 1

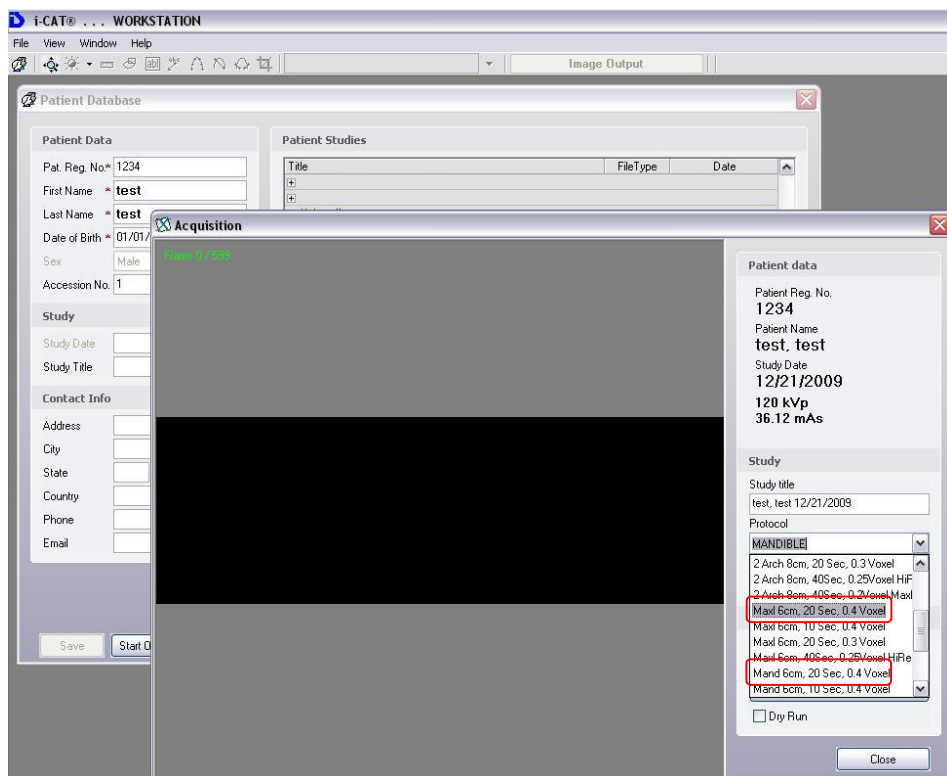
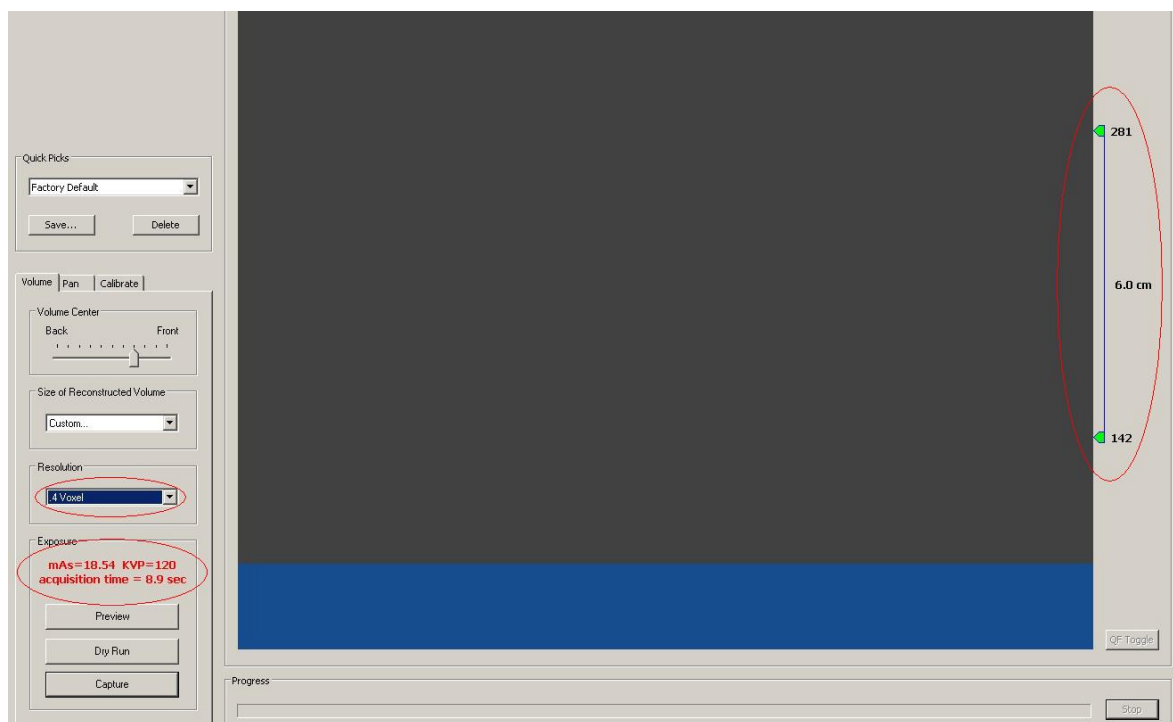


Figure 2

i-CAT Next Generation

- Voxel: 0.4
- Scan height: 6 cm
- Scan time: 8.9 seconds



Patient Preparation, Positioning and Scanning

- Template Positioning:** Ensure that the template is fixed and stable in the patient's mouth. The technologist should not perform the scan if the template does not fit easily and soundly in the patient's jaw – contact the dentist.
- Patient Positioning:** The patient and the template should be motionless during the scanning procedure. In order to ensure this, the patient's head should be firmly attached to the Head Holder. If the lower jaw (mandible) is to be scanned, instruct the patient to bite an object such as a gauze pad.

The patient's head should be tilted so as to minimize the interference of the jaw and teeth images with artifacts stemming from metal fillings. A first positioning (before the Pilot scan) should be with the occlusal plane parallel to the scanner light marker. If the pilot scan reveals that the angulation is wrong, then further head tilting should be carried out. Each time that the

patient's head is re-positioned, attachment to the head holder should be checked.

Any metal object such as jewelry should be removed from the scanned region.

- c) **Patient Scanning:** The region to be scanned should include all the relevant jaw volume, the template and the teeth. The horizontal marker line should be in center of the region of interest, in order not to miss relevant volume due to accidental patient motion.

Prior to the scan, the patient should be instructed not to swallow. The CT Technologist may wish to instruct the patient to swallow several times before starting the CT scan.

The Template Positioning and Scanning

- a) **Positioning:** The template should be placed on the Styrofoam (Polystyrene) scan box, in the same orientation as scanned in the patient's mouth. The template should be positioned on the i-CAT platform similarly to the patient's head position during the patient scan, including the distance to the center of the FOV, the angle and the orientation.
- b) **Template Stability:** Ensure the stability of the template, using either the wide or the narrow slot in the Styrofoam box.

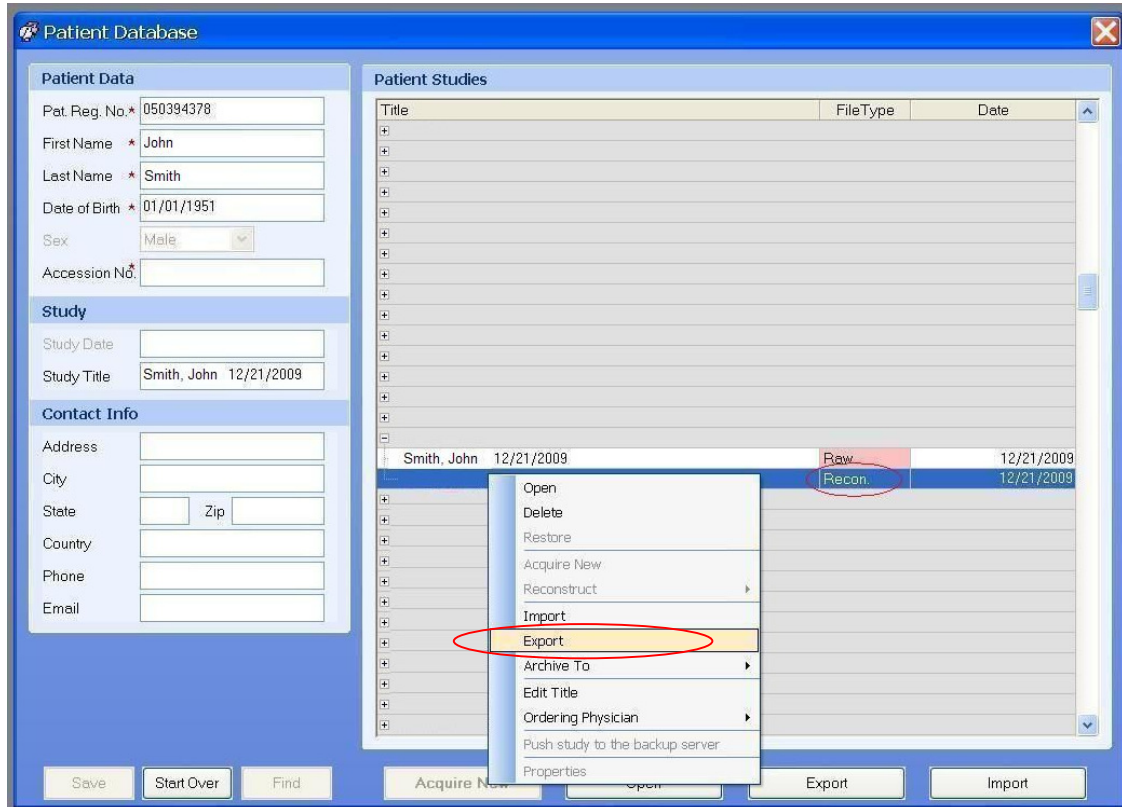


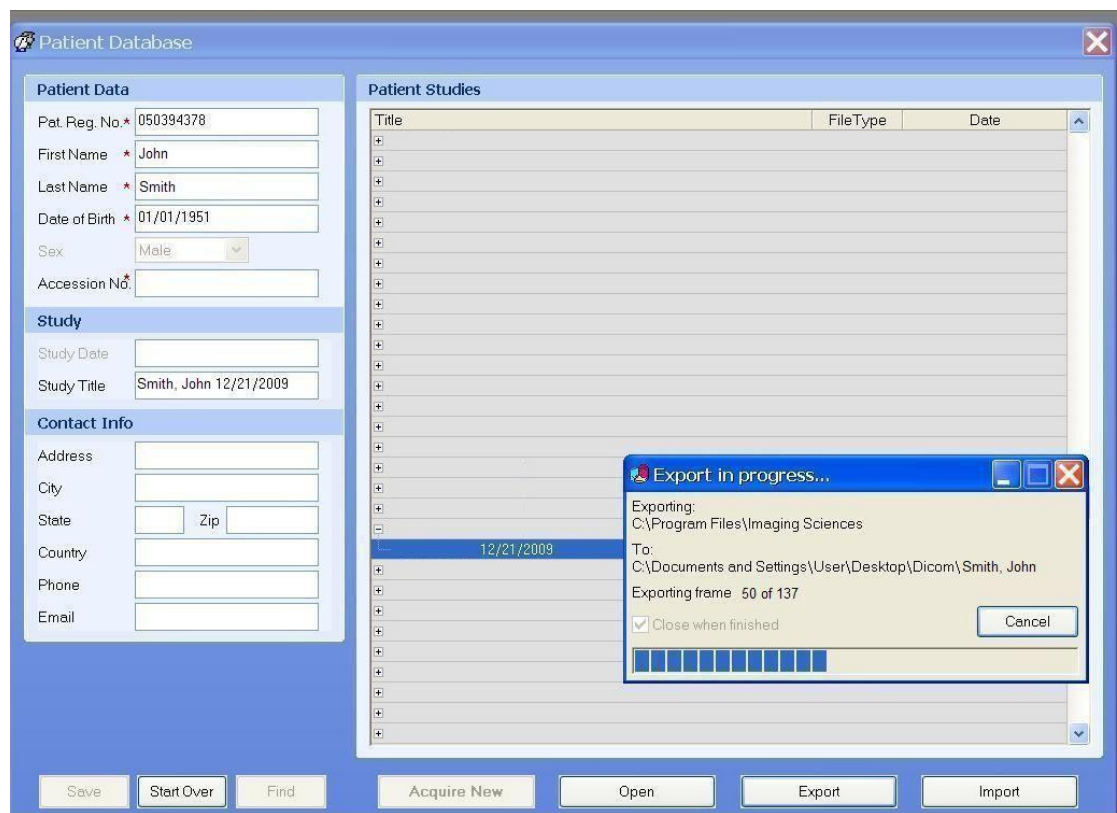
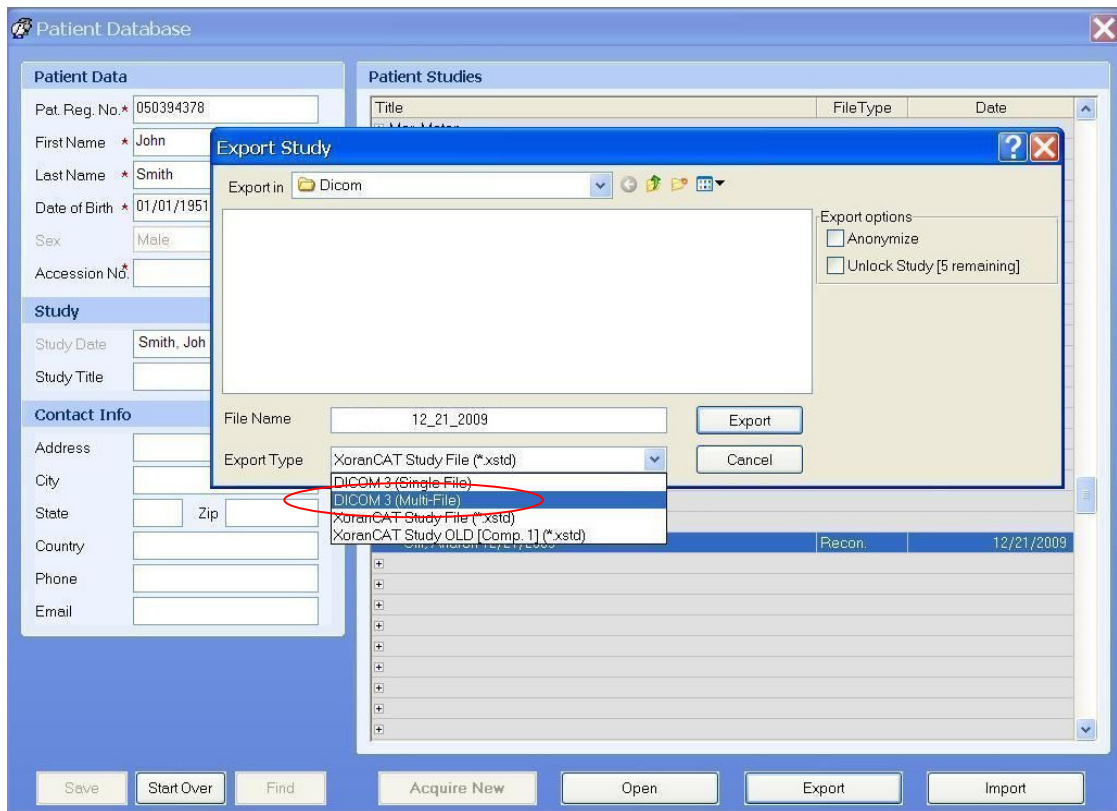
Never place the template in a vertical position.

Data Export

a) i-CAT Classic:

Export the **Recon** data in **DICOM 3** multi-file format, using the scanner export function.





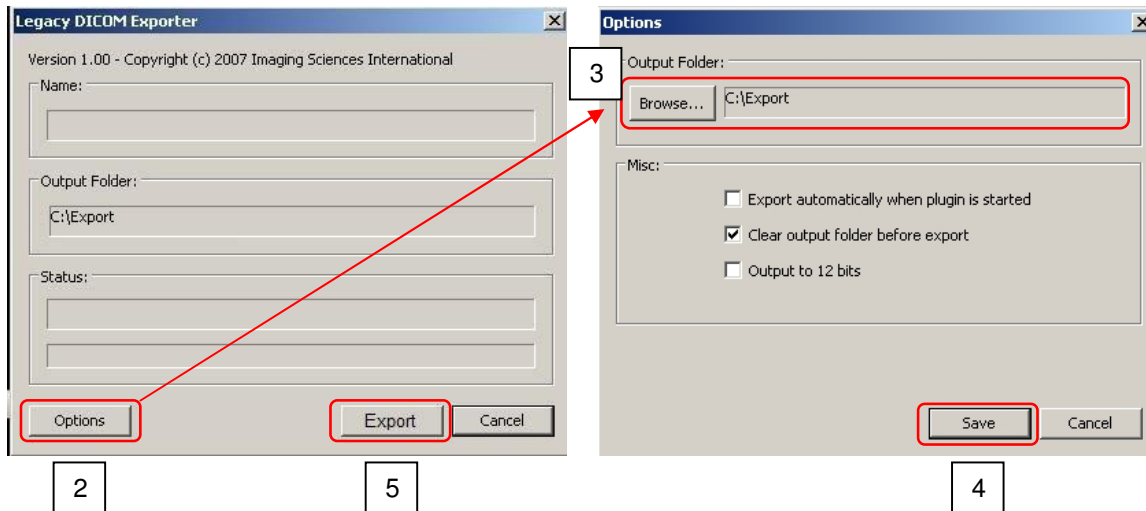
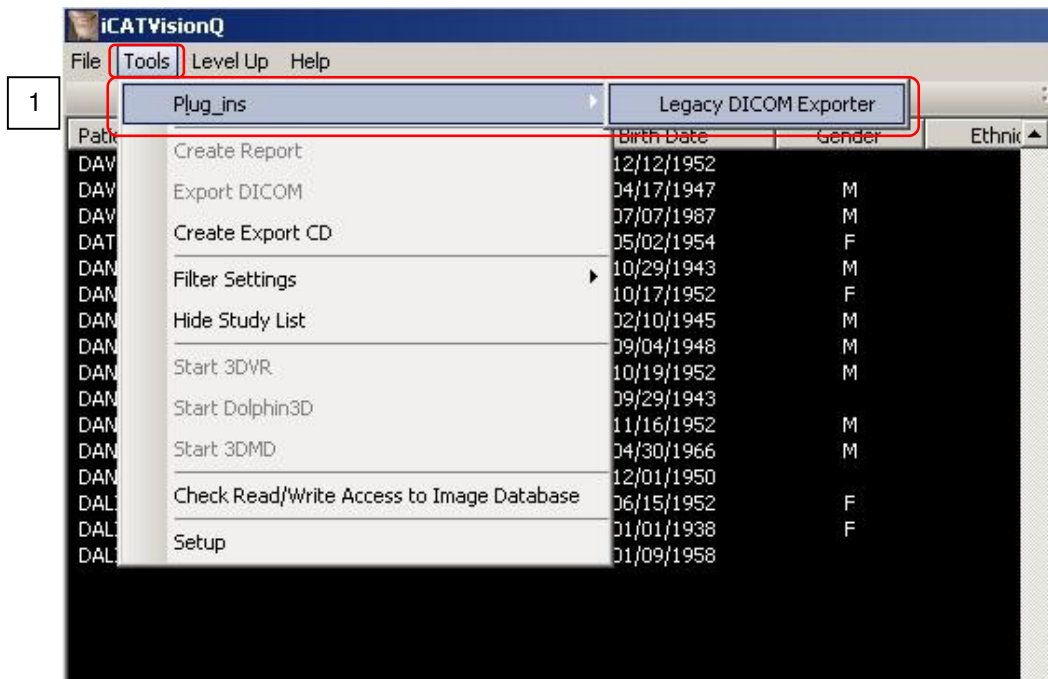
b) **i-CAT Next Generation:**

Export data via the i-CAT Vision software using the **Legacy DICOM plug-in**.

This plug-in is a small upgrade that i-Cat usually provides right away.



If you don't know if you have the plug-in, or simply don't have it, please contact your local i-CAT support.



Data Saving

- a) Data for each jaw should be saved in **separate datasets (see below)**. The data for each template should correspond to the data of the patient.
- b) Each patient and template datasets should be copied to separate folder, compressed (right click on folder > send to compressed zipped folder).
- c) Send zipped file(s) to iDent partner via the internet (contact your iDent partner for upload information).

