

Simplant[®]

CBCT to Simplant[®]

- Export protocol for Newtom VGi 5G

This protocol gives a detailed description of the steps to be followed for exporting your NewTom VGi/5G scan images, with NNT software V3.00 or above, in DICOM format and for importing these in Simplant. This protocol aims at an optimal visualization of your images in Simplant but does not guarantee easy segmentation.

Part 1: NNT software V3.00 or above

1. Scan the Patient (as provided by NewTom)
 - a. Select the FOV:

For implant dentistry, [12x8] FOV (in case there is no metal in the mouth, such as implants and large amalgam fillings) or [8x8] FOV is recommended.

- b. Positioning the patient:

Position the patient in such a way that he/she is symmetrically positioned and the volume of interest is centred in the FOV. This is achieved by manually repositioning the patient's head and by performing a check via scout flash images.

Note: When a scan prosthesis is applied during the scan, make sure the prosthesis is separated from the opposing arch by a radiologically transparent bite-block.

- c. Taking the scan and process the dataset

Perform the patient acquisition by selecting the "Patient scan" procedure. This will result in a dataset of axial images (Volumetric data) with an isotropic voxel.

- i. Creating a Study

Create a Study from the Volumetric data. By creating the Study, you can crop unnecessary portions and limit it to the volume of interest. In the process, the orientation of the patient's head can also be finely adjusted in terms of symmetry and orthogonality. Select ISO (isometric voxel).

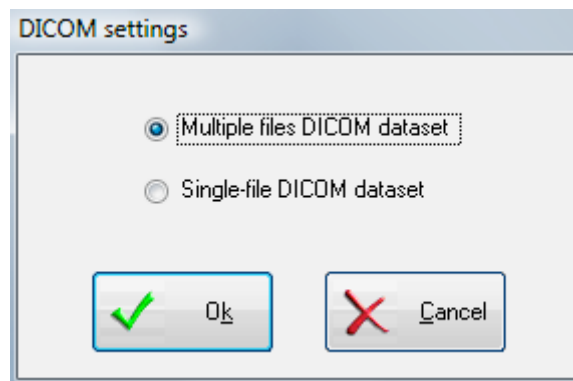
- ii. Scanning the prosthesis

When the prosthesis has to be scanned separately, select the same FOV and settings as for the patient scan, and perform the scan by selecting the "Denture scan" procedure. Then proceed in the same way and with the same settings as for a patient scan.

2. Exporting Dicom to a folder

a. Setting up “DICOM settings” in NNT

Choosing your DICOM settings can be achieved by selecting “Save in DICOM Format” – “Sequence of Axial images” – “DICOM Settings” in the File menu. Here you select multiple files.



This setting needs to be configured only once and will remain unchanged until you configure it differently.

b. Exporting Dicom

The data has to be exported as a “Sequence of Axial Images ...”, and you can choose either “Free Matrix” or “512x512 Matrix”; the first one is preferred but not indispensable. You will be prompted to select the destination file path.

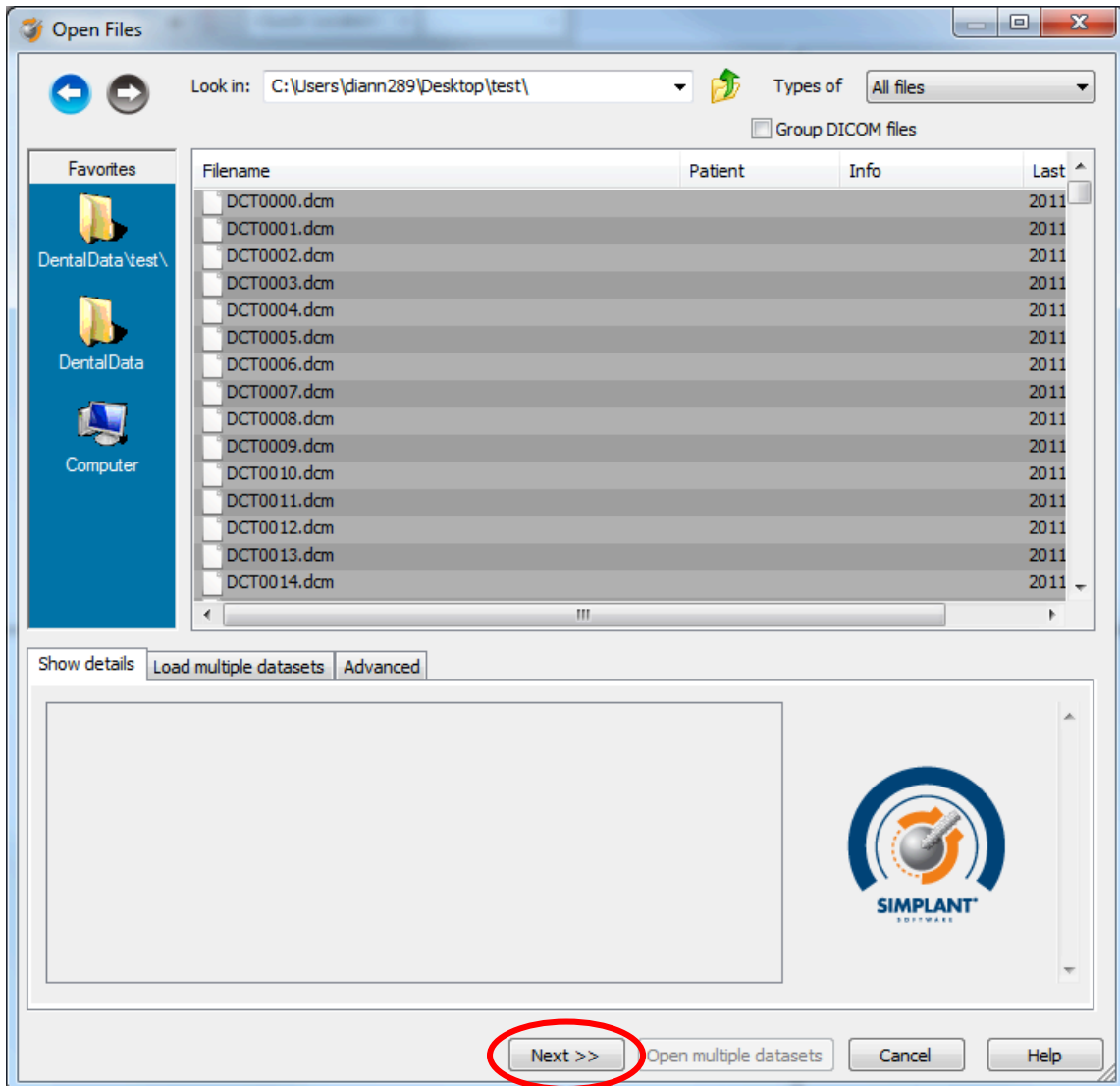
Exporting in DICOM format can be done by selecting “Save in DICOM Format” – “Sequence of Axial images” in the FILE menu. Subsequently choose the matrix you desire. You will be prompted to select the destination folder.

Part 2: Simplant® software

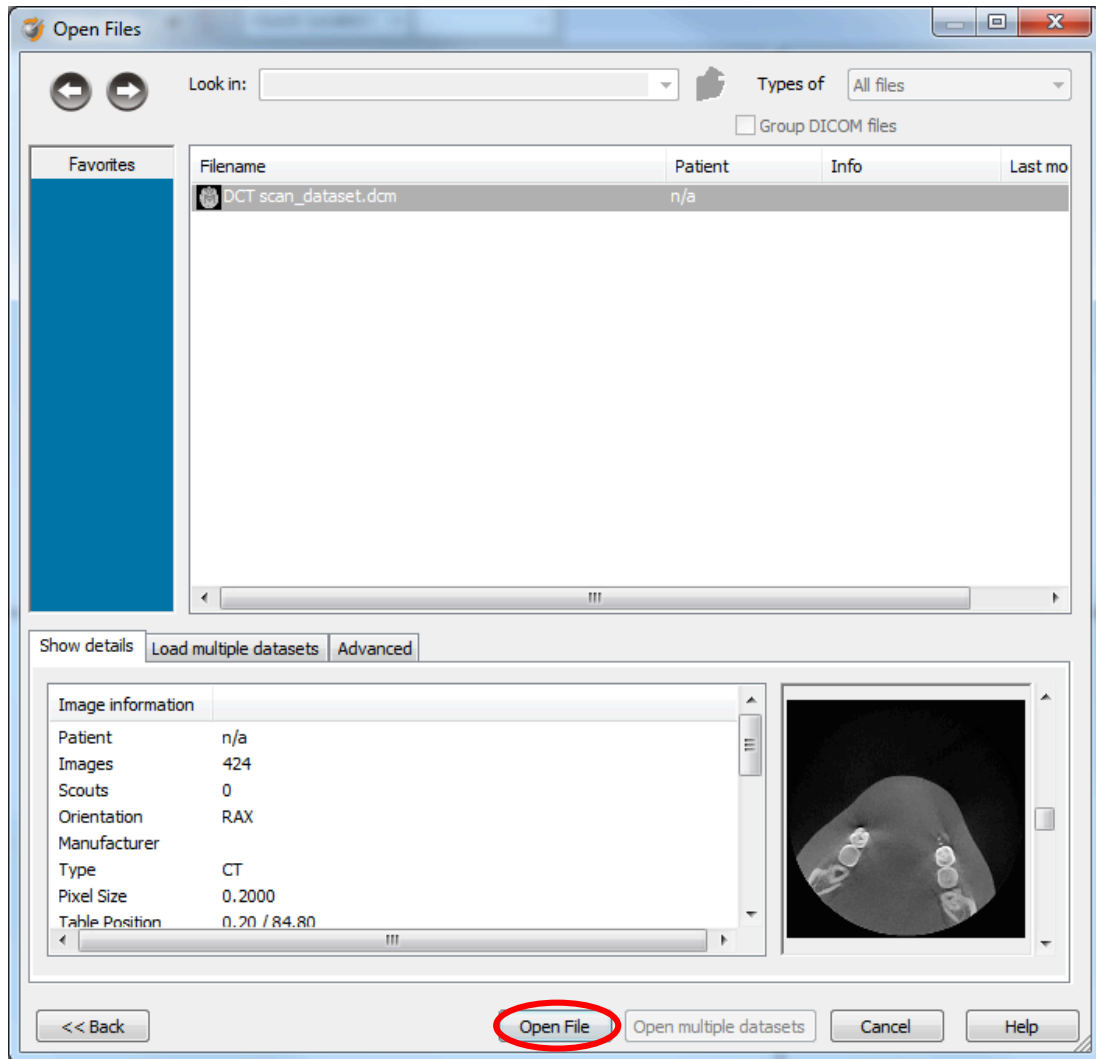
1. Open Simplant Pro and click 'Open Files' in the Task Panel.



2. In the 'Open Files' dialog box browse to the folder where you saved the dicom images and click 'Next'.

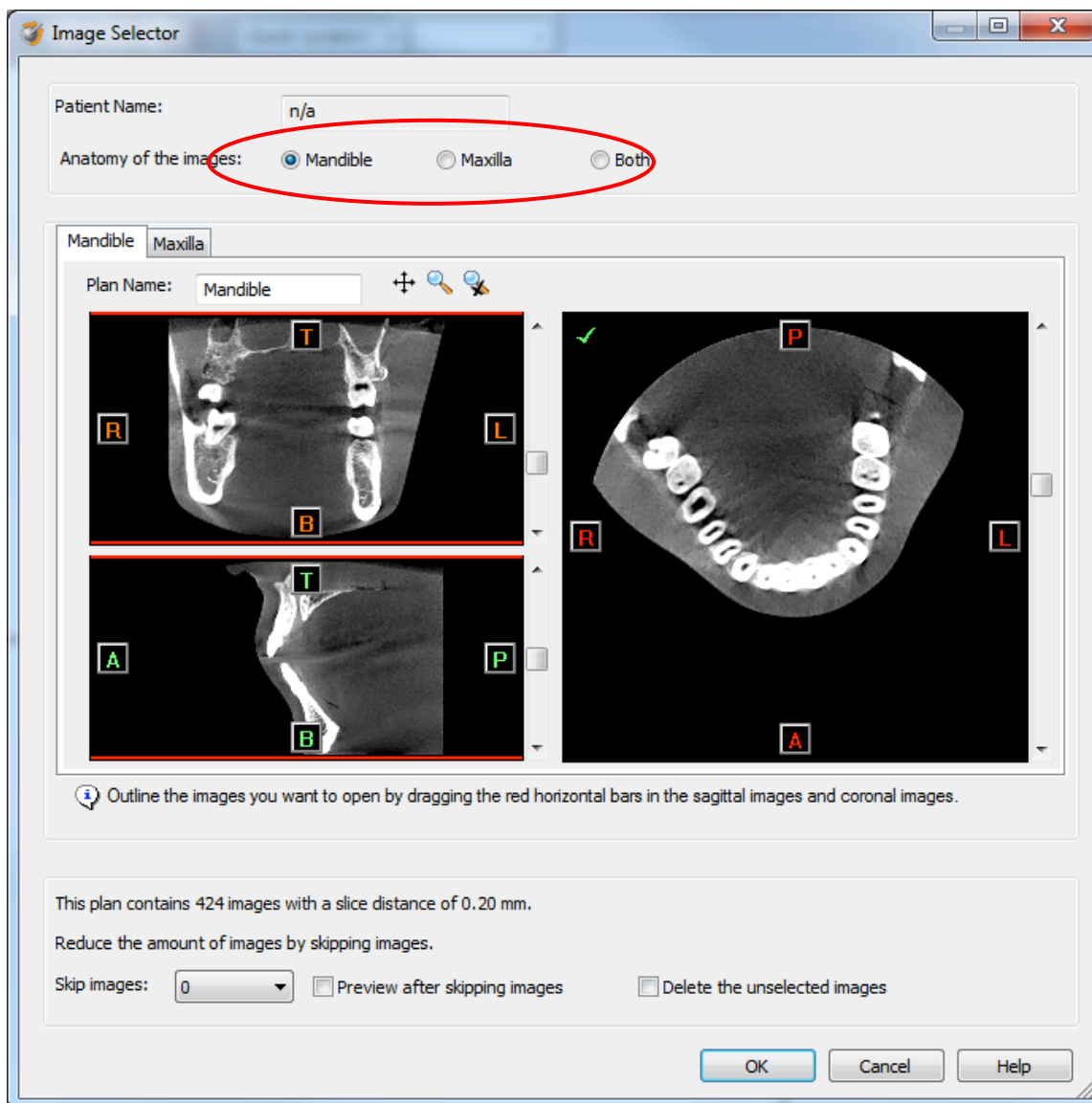


3. By clicking 'next', the data set becomes grouped. The image information and preview of the axial images can already be checked. Select the data set and click 'Open File'.

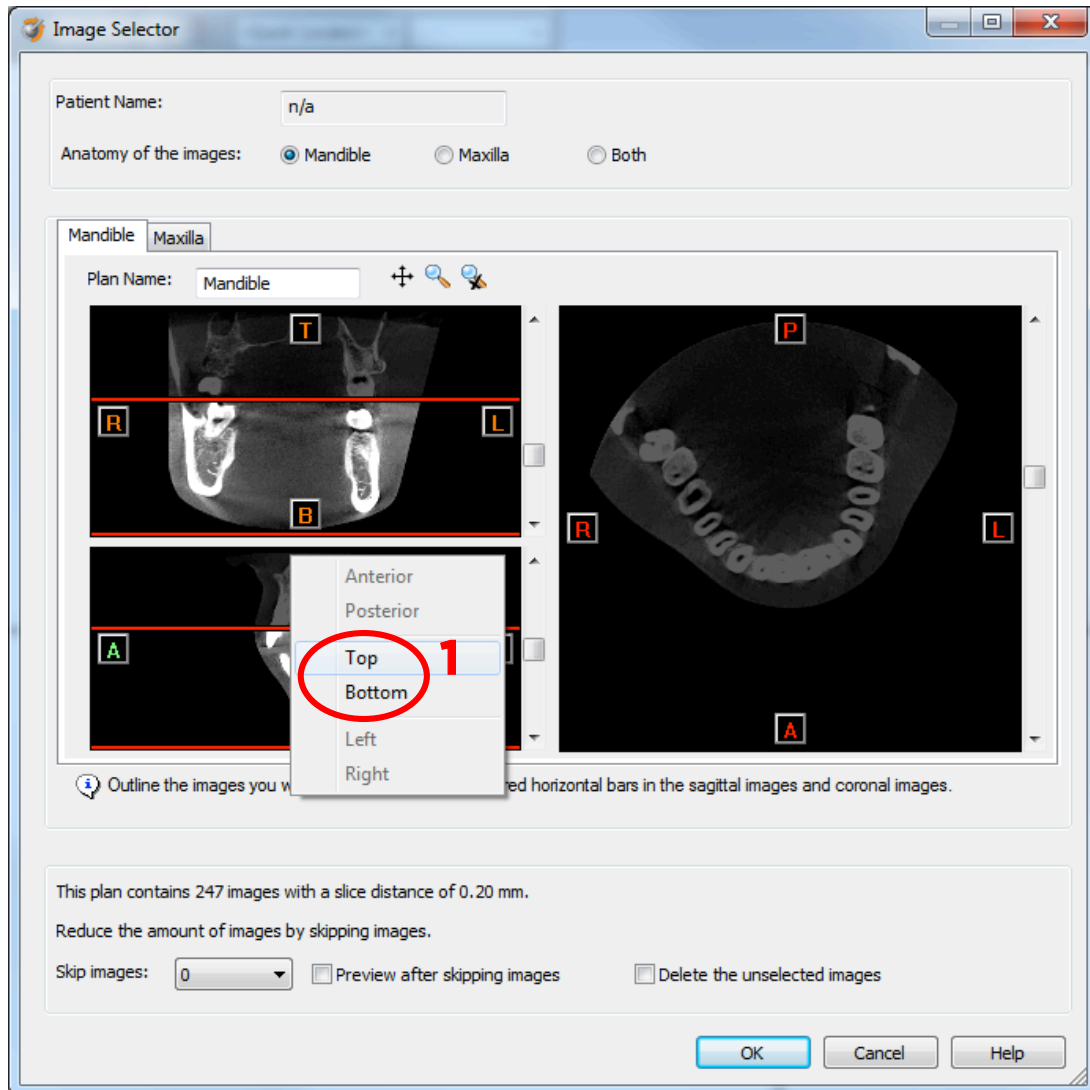


REMARK: Activating the checkbox 'Group dicom files' in the previous step will in the future automatically group your dicom files and show you the preview.

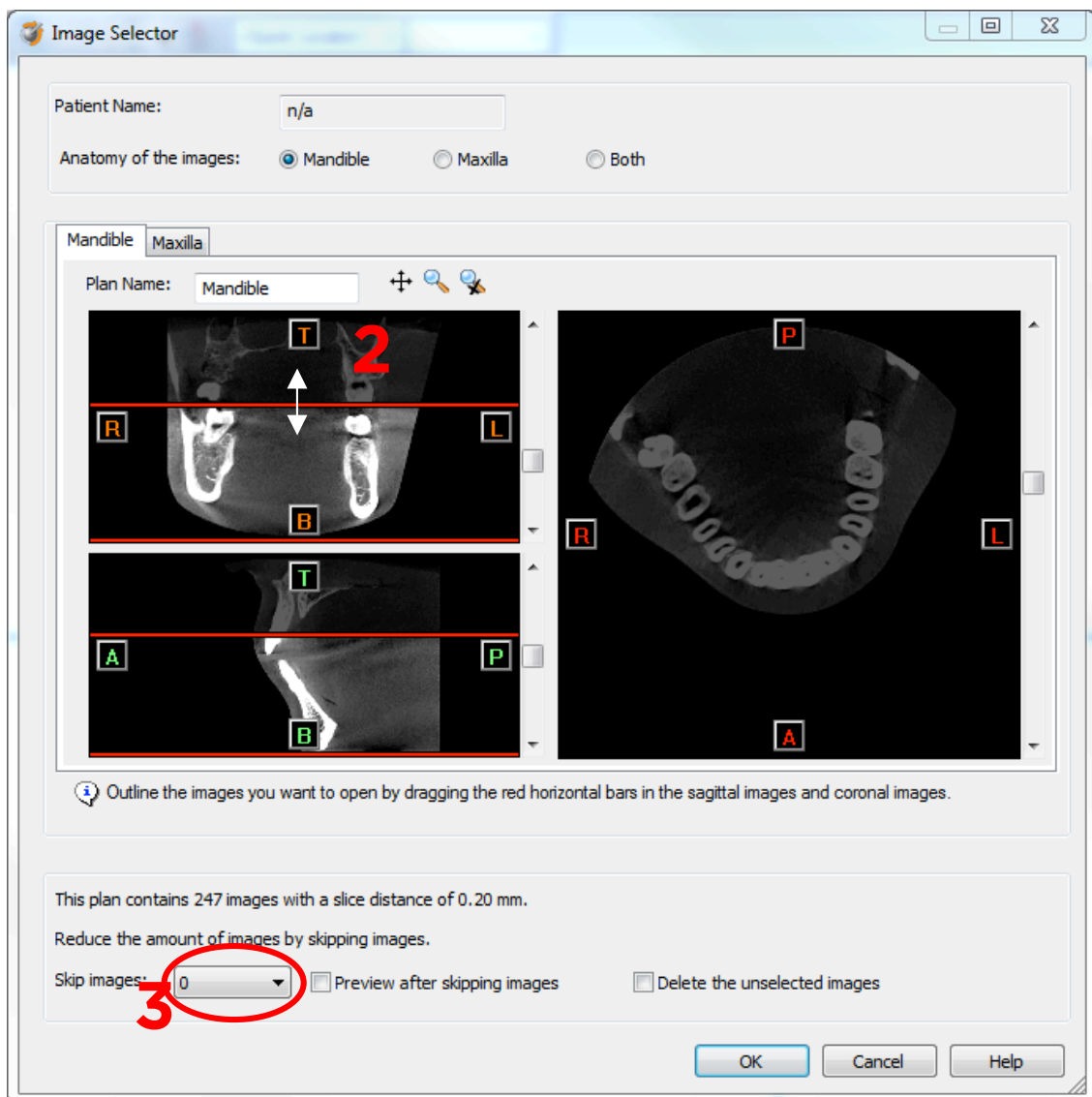
4. The Image Selector dialog is prompted to the user. In this dialog, the user selects the corresponding anatomy of the images, and selects the required images for importing.



If one or more orientation parameters were not exported, review if the orientation that was set is correct. The orientation can be adjusted by selecting the correct orientation parameter in the dropdown (1).



In order to reduce software load, you can REMOVE UNNECESSARY IMAGES from the start or the end of the frame set by dragging the red lines in the coronal and sagittal view.(2)



In order to further reduce software load, you can remove axial images by selecting the skipped image count different from 0 (for example: skip images = 1 selects every second image, skip images= 2 selects every 3rd image) (3). For exported DICOM image sets with a slice distance below 0.4mm, it is **recommended to skip 1 image.**

When ready, press OK. The software imports the selected frame set to Simplant.

5. You are now ready to start your planning.

Part 3: Exporting to DICOM and automatically import into Simplant®, versions prior to Simplant® Crystal (version 13).

From Simplant Crystal on, this functionality is automatically installed and configured with the English version.

This feature can only be configured when Simplant and NNT are installed on the same physical computer and will allow NNT to export the DICOM dataset into the Simplant import module. Therefore there is no need to specify a folder where the DICOM images need to be exported to and there is no need to look for that folder in Simplant to import them.

We recommend that this feature is installed and configured by Dentsply Sirona Implants or NewTom technical staff. The exact steps for configuring this functionality can be found in Appendix A.

1. “Send data to Simplant”

Once this feature is installed and configured, you can access it from the NNT software, in the File menu.

The preparation of the scan remains the same so please follow steps in Part 1 step 1 as described in the prior chapter.

When you want to export DICOM images, you now only need to select “Send data to” in the File menu of NNT and click on Simplant.

Simplant will start and will automatically import the DICOM data. The “image selector” screen as described in Part 2 step 4 is shown and from here on you can follow the same procedure to finish the import.