vatech america

[Version 1.1]

Pax-I3D Green CT 2 (16x09)

Fundamentals of 2D and 3D

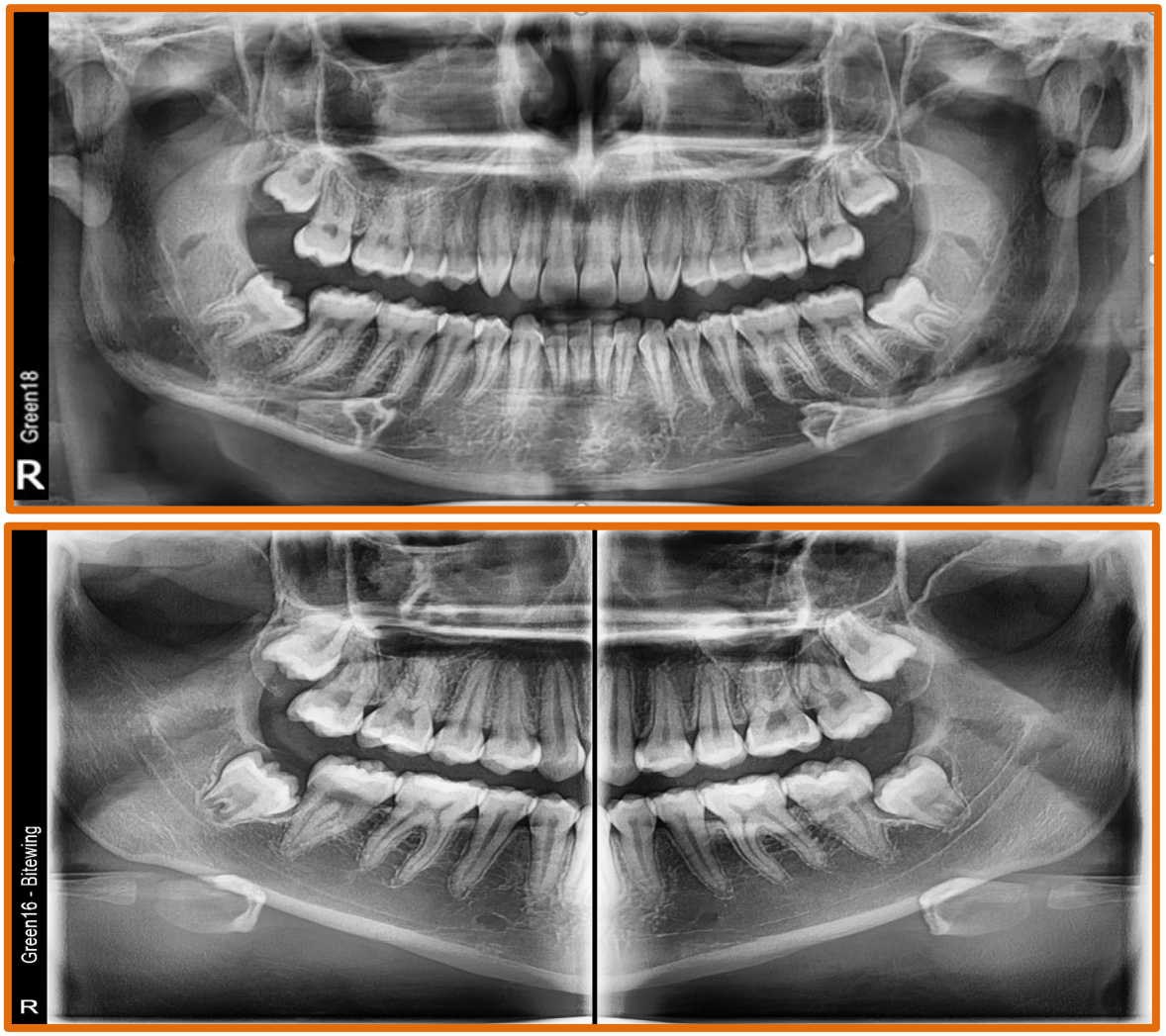
July 2020

Education Team

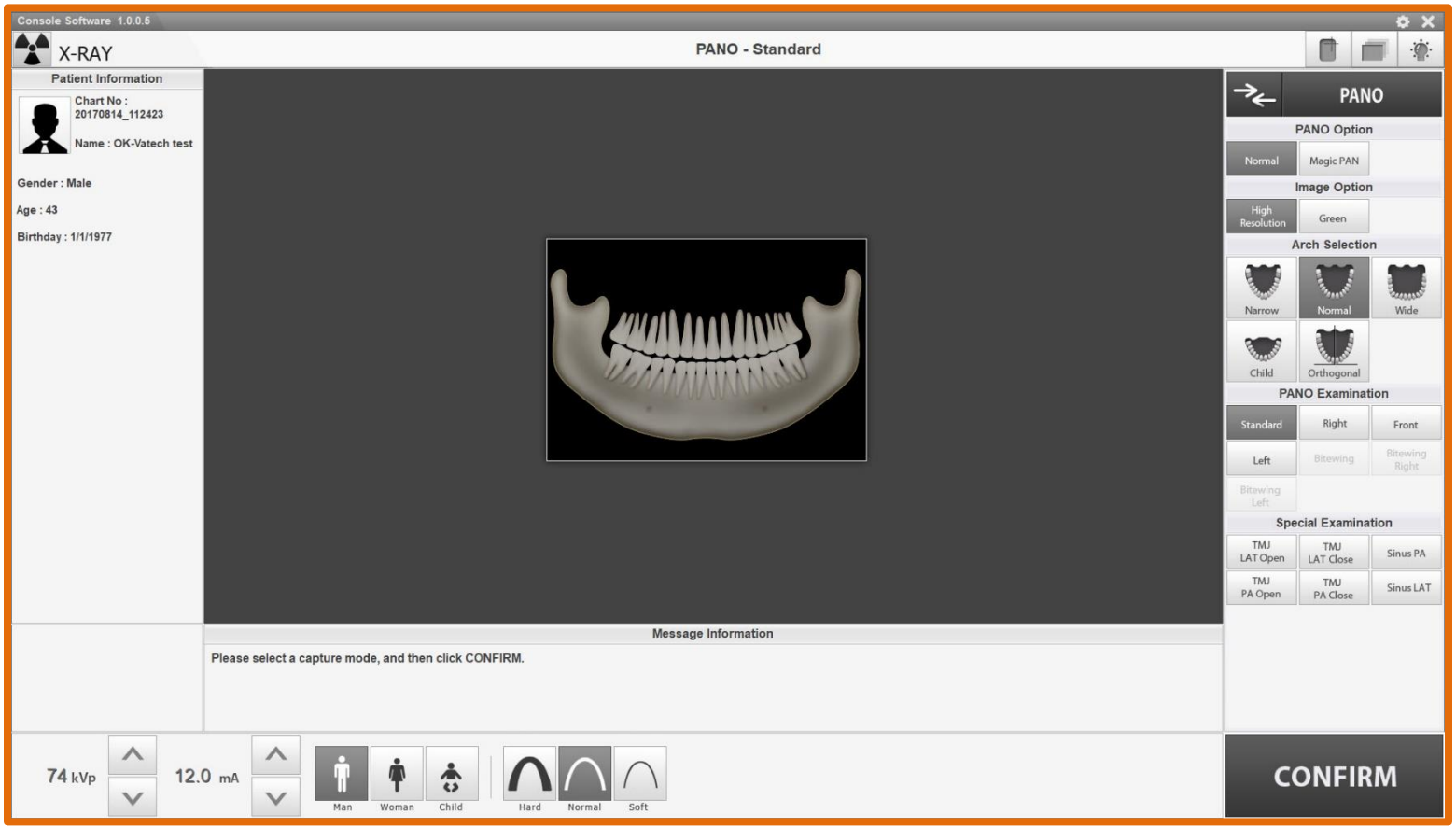
vatech

Index

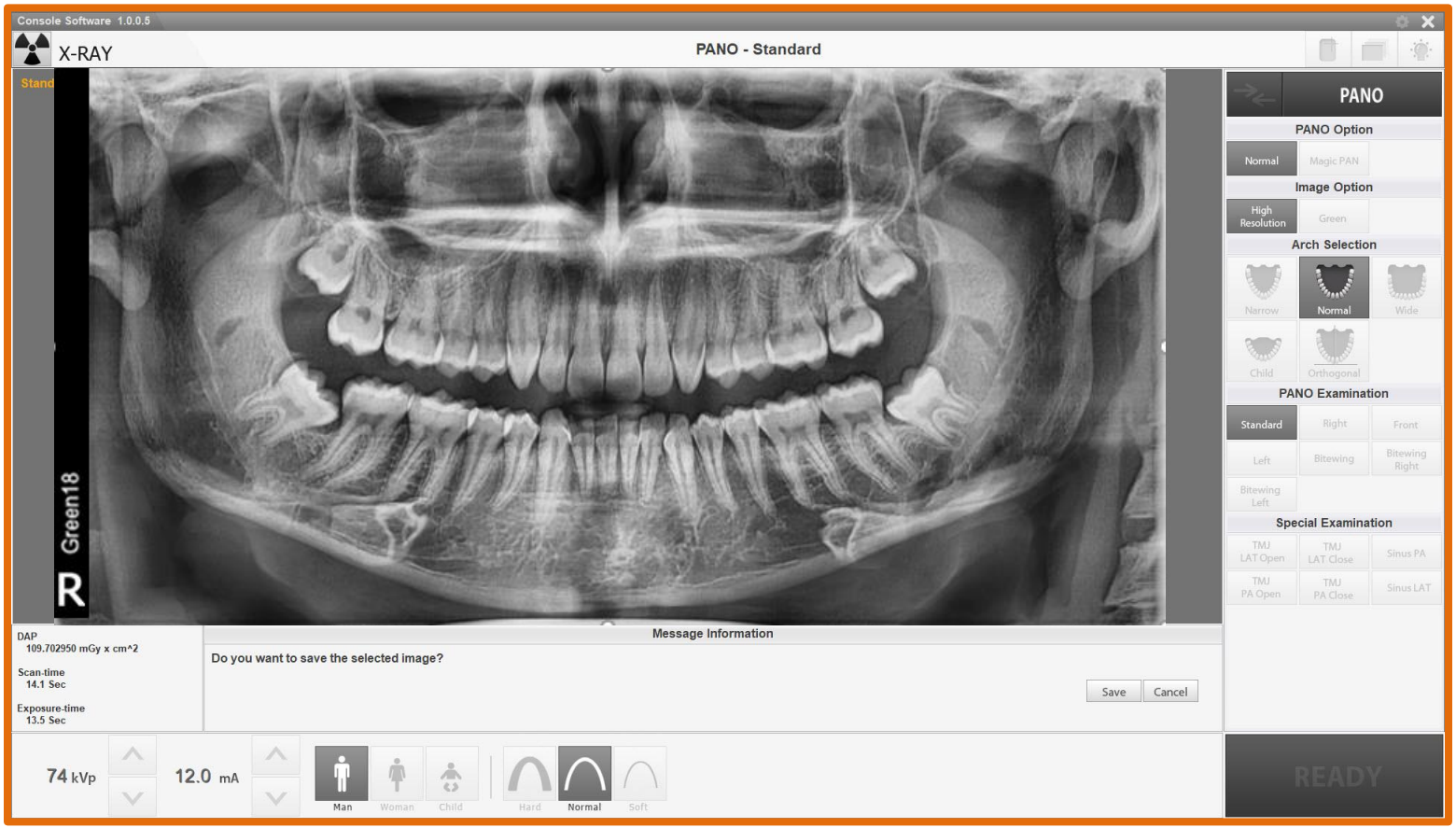
01. 2D Imaging



2D Image Capture Software – *Pre-Capture Options:*



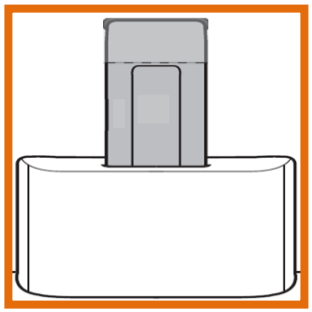
2D Image Capture Software – *Post Capture Options:*



01-II. Positioning Appliances and Laser Lights

Components	Name and Function
	Bite Stick: *- Pan, Bitewing and CBCT*
	Chin Support: *- 2D TMJ and Sinus CBCT TMJ*
	Chin Cup: *- Edentulous*
	Normal Chin Support
	Low Profile Chin Support: *- Sinus & TMJ*

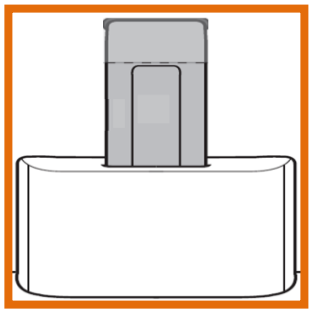
01-II. Positioning Appliances and Laser Lights



Panorama:

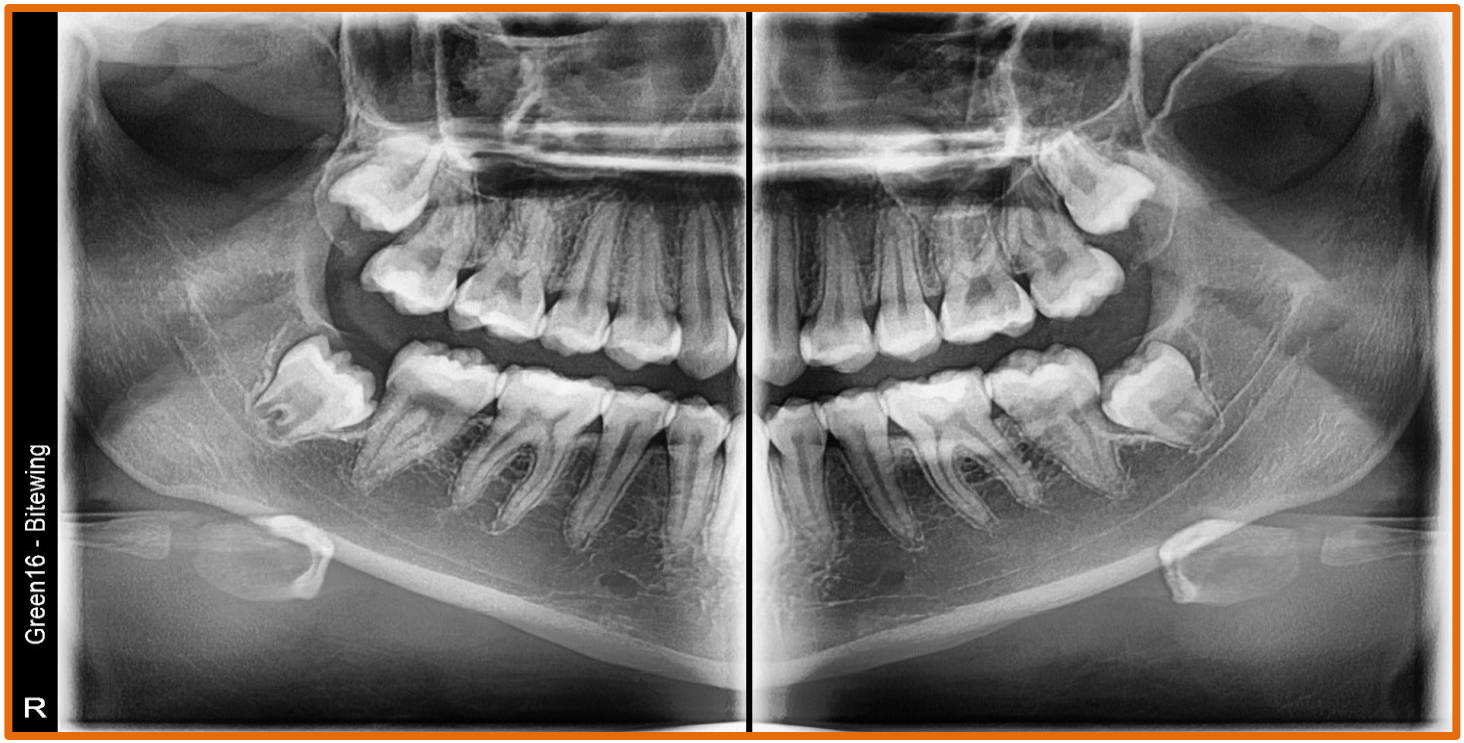
Bite Stick with
Pan/CBCT Chinrest

01-II. Positioning Appliances and Laser Lights



Bitewing:

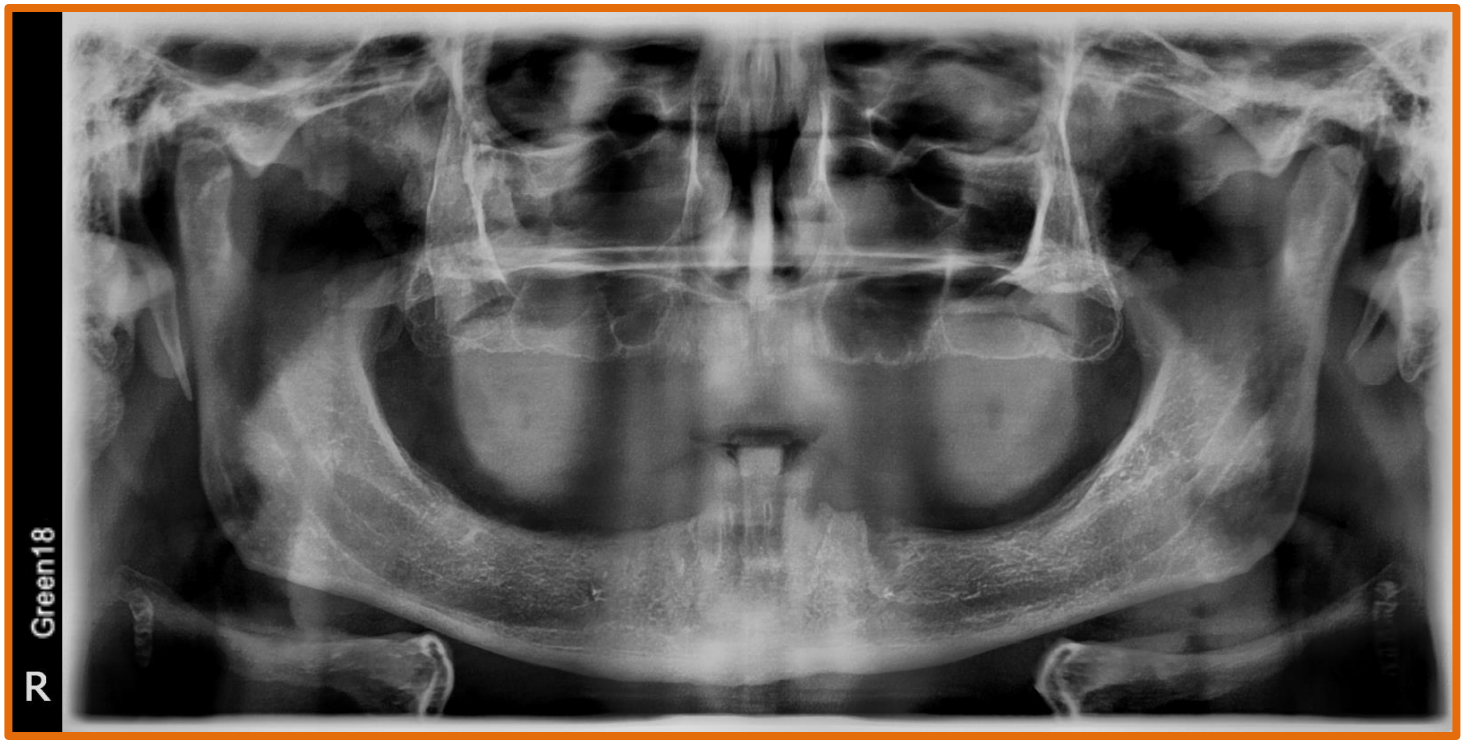
Bite Stick with
Pan/CBCT Chinrest



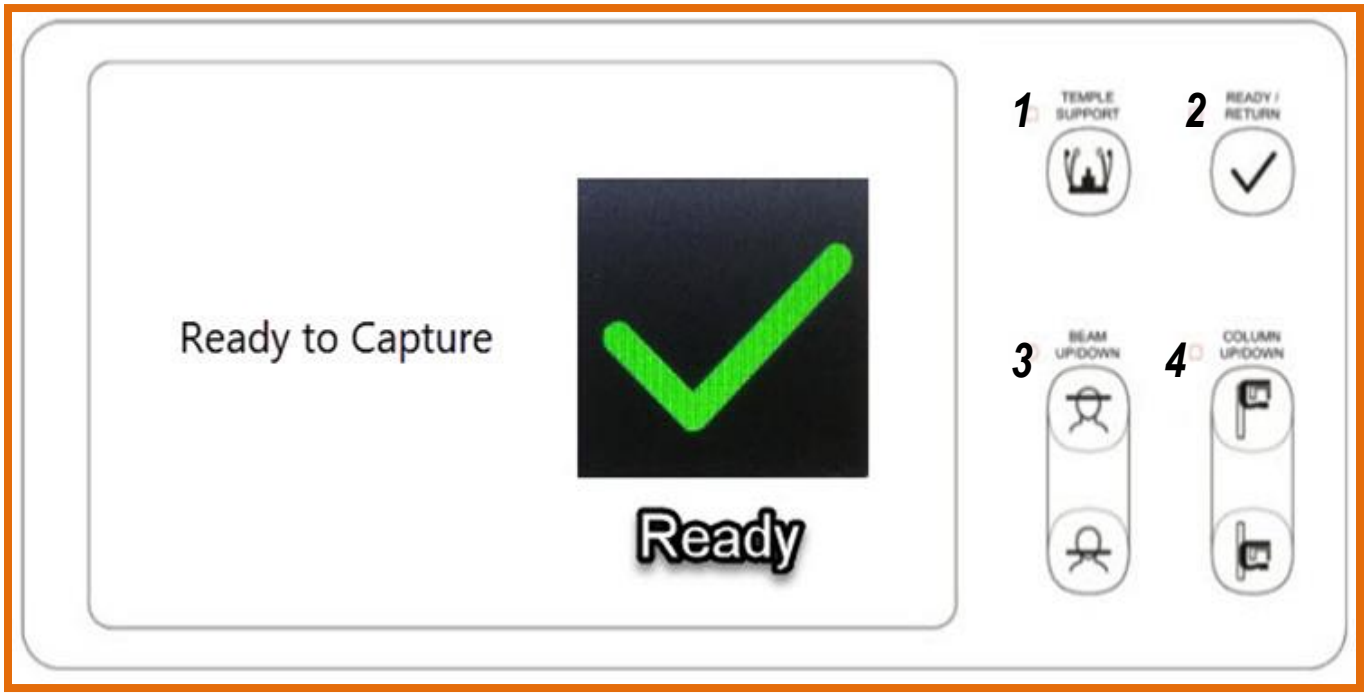
01-II. Positioning Appliances and Laser Lights

Edentulous:

Sinus/Edentulous Appliance with Pan/CBCT Chinrest (not shown)



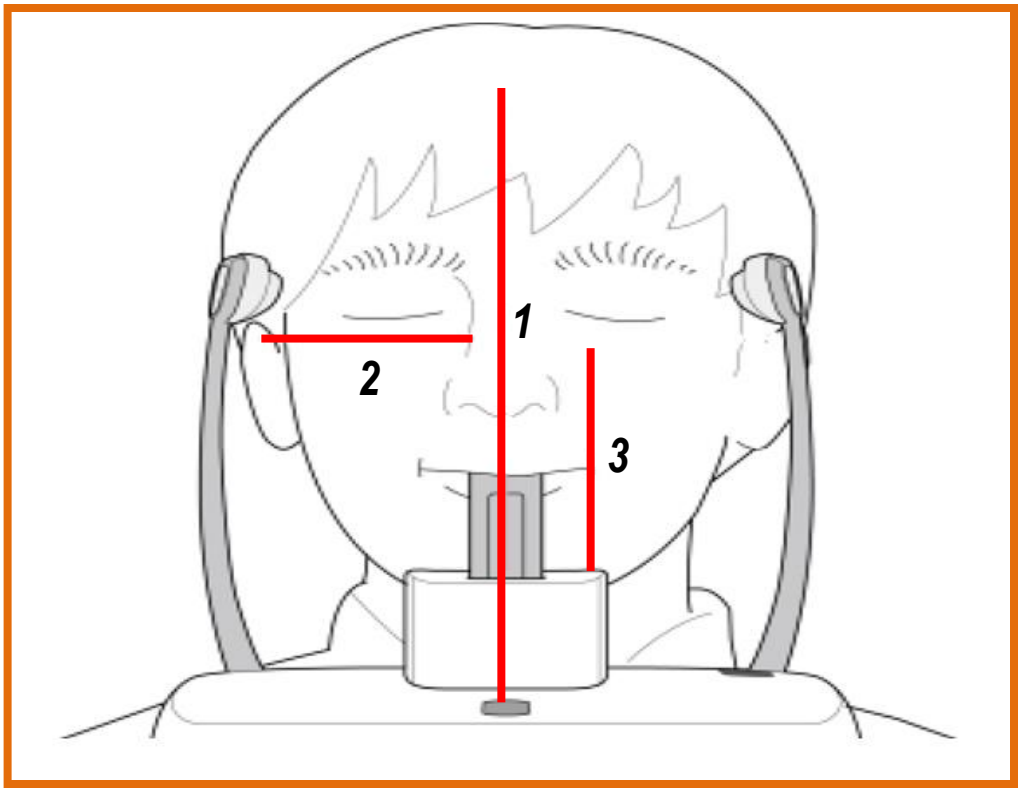
Touch Pad



1- Open and Close Temple Rods
2- Move System into "Ready" (Capture) mode
3- Adjust Frankfurt Light
4- Adjust for Patient Height

01-II. Positioning Appliances and Laser Lights

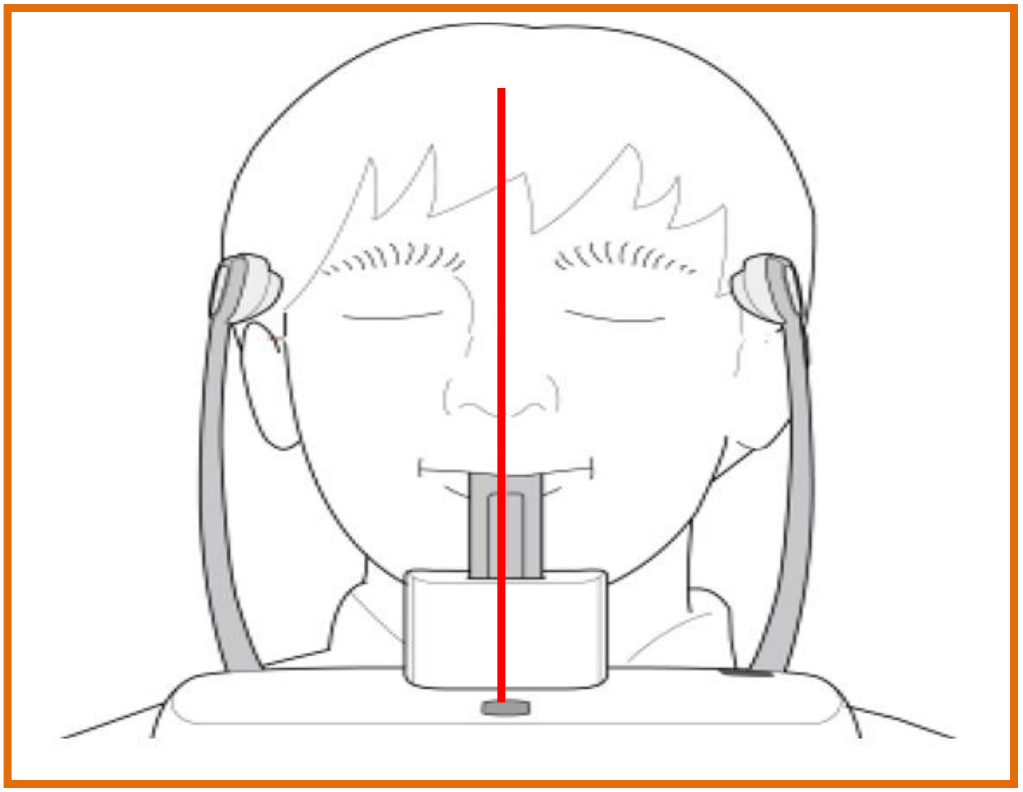
PANORAMA OBJECTIVE : ***"Natural Head" Position (Panorama and Bitewing Modes)***



<u>3 Positioning Lights:</u> ***1- Mid-Sagittal Light, 2- Frankfurt Plane Light, 3- Canine Light***

01-II. Positioning Appliances and Laser Lights

PANORAMA OBJECTIVE : *"Natural Head" Position (Panorama and Bitewing Modes)*



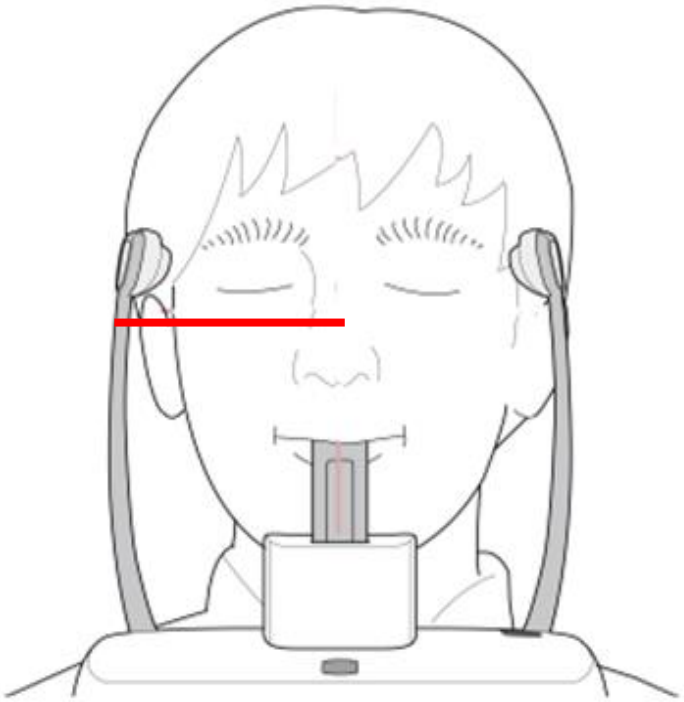
Mid-Sagittal Vertical Laser Light:

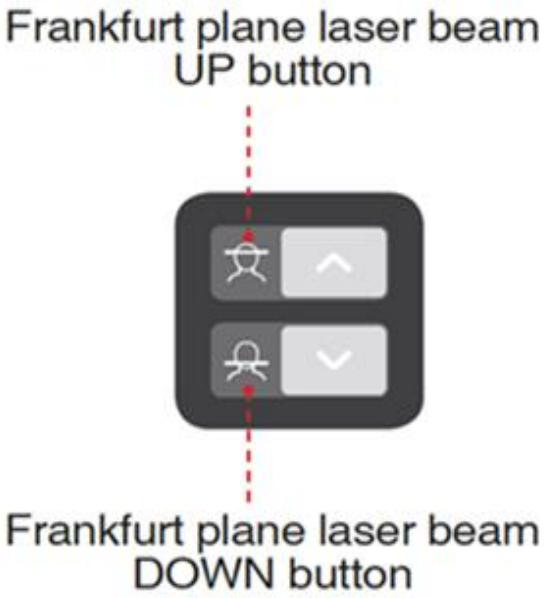
- Center between the Eyebrows

- Center of the Philtrum

01-II. Positioning Appliances and Laser Lights

PANORAMA OBJECTIVE : *"Natural Head" Position (Panorama and Bitewing Modes)*





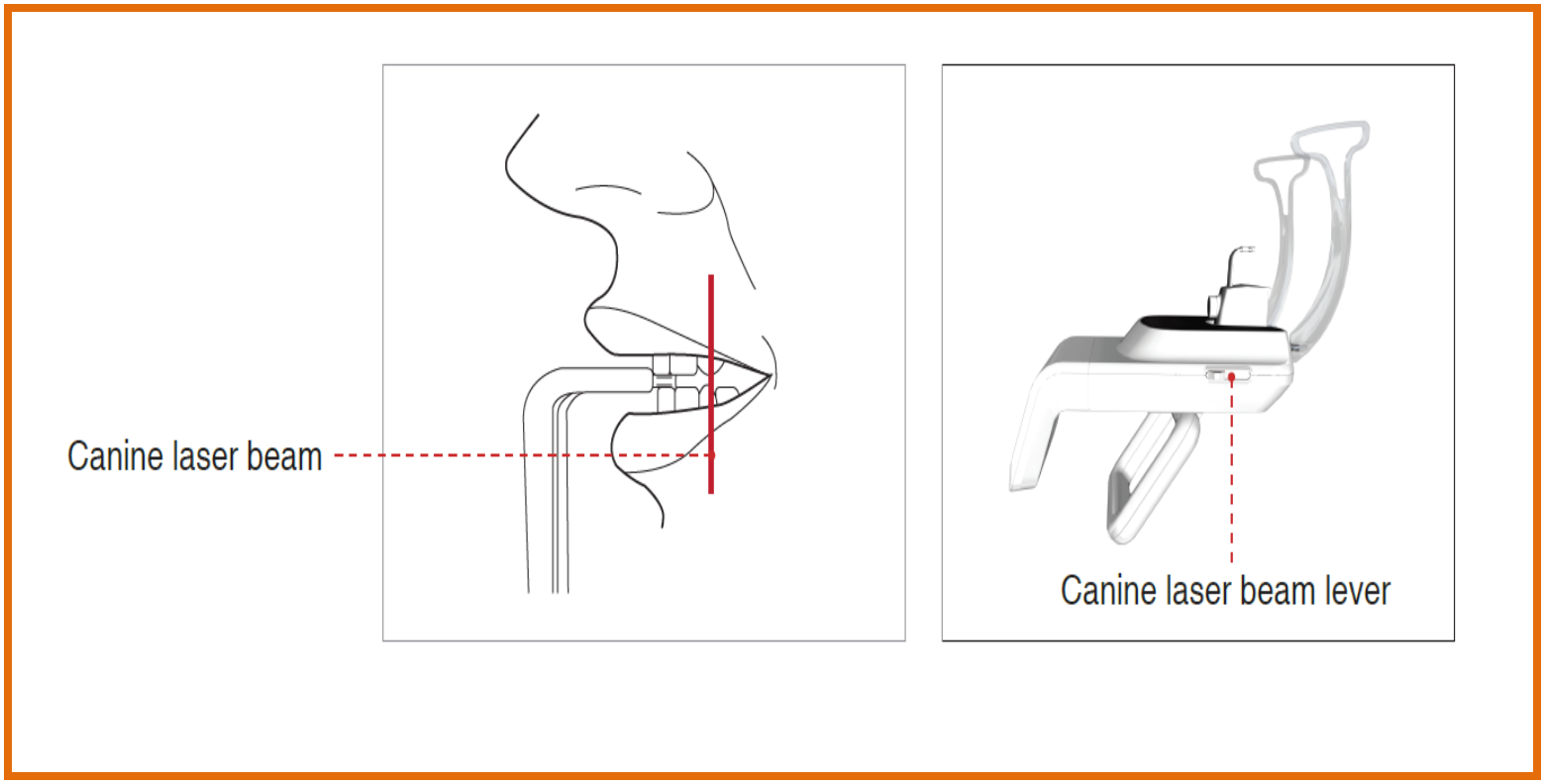
Horizontal (Frankfurt) Laser Light

- Top of Tragus (EAM)

- Bottom of the Orbital Rim

01-II. Positioning Appliances and Laser Lights

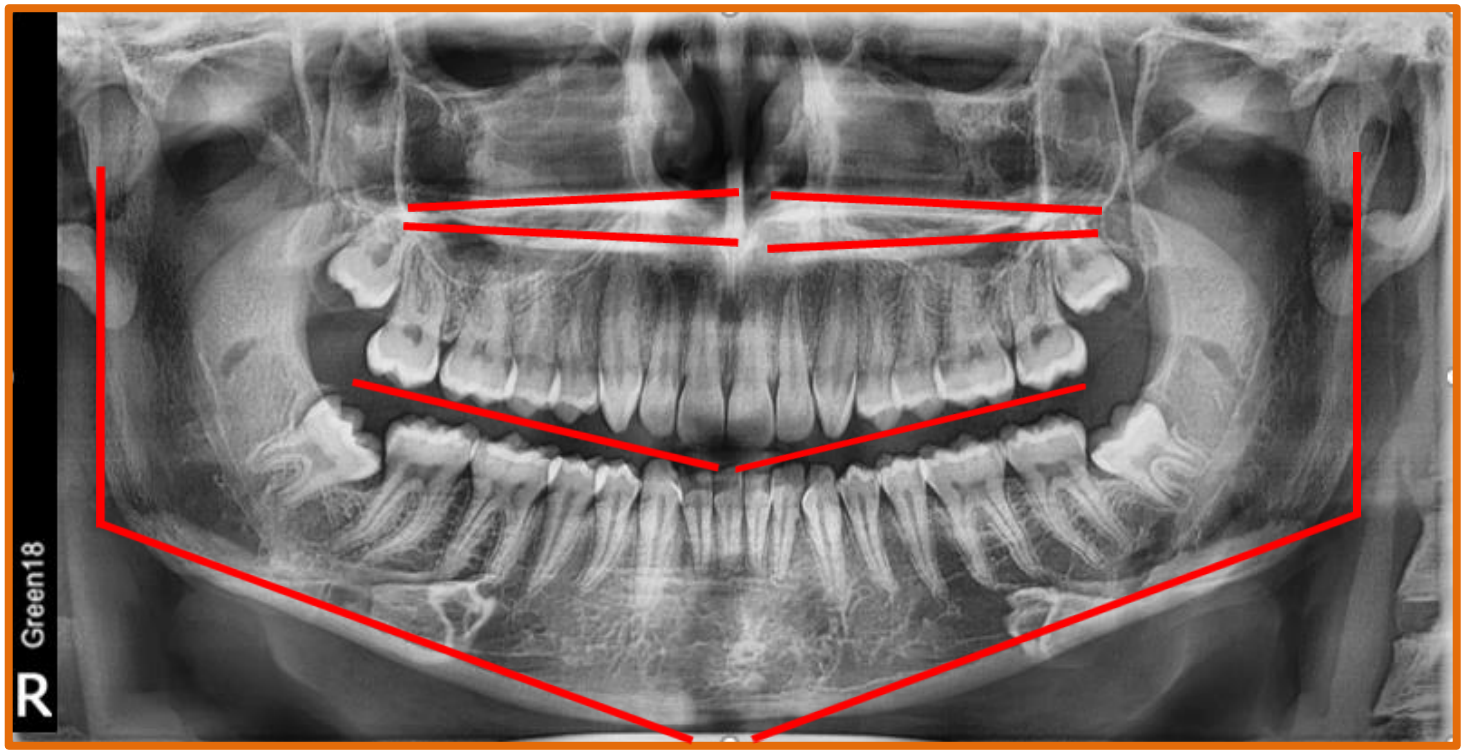
PANORAMA OBJECTIVE : *"Natural Head" Position (Panorama and Bitewing Modes)*



Canine Laser Light

Centered on the Maxillary Canine Tooth

Correct Patient Positioning…



…creates an anatomically accurate image.

Incorrect Patient Positioning…

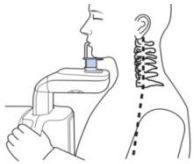
…cannot create an anatomically accurate image.

01-IV. Green CT 2 – Panorama - Operator Positioning Guide

Preparation:
Remove metal objects from the neck up including: necklaces, eyeglasses, earrings, and any other metal objects including removable appliances such as: dentures, partials, & orthodontic retainers.

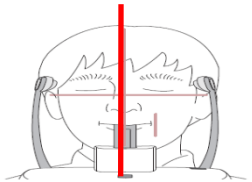
System Initialization and Height Adjustment:

Position the patient when the red laser lights appear, and apply a new hygiene barrier. Elevate the imaging system approximately 2-3cm superior to the final height of the patient.



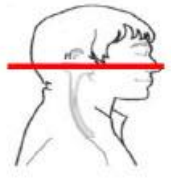
Proper Vertical Position:

Patient should stand as fully upright as possible, with the feet positioned approx. 1" forward of vertical. Instruct the patient hold firmly to the bottom portion of the bar with palms facing towards the ceiling.



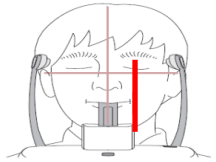
Adjustment of the Mid-Sagittal Guide Light:

Align the Mid-Sagittal Laser light with the center of the eyebrows and the Philtrum above the upper lip.



Adjustment of the Frankfurt Horizontal/Occlusal Guide Light:

Align the Frankfurt light to the top of the Tragus and lower Orbital Rim. Use the column adjustment button to make minor leveling adjustments. Proper alignment should generate 10-degree occlusal angle



Adjustment of the Canine Guide Light:

Use the slide knob under the shin rest to align the canine guide light to the center of the upper left canine tooth.

01-IV. Green CT 2 – Panorama - Patient Instruction Guide

To Patient:

Please follow these instructions to capture a 2D Panorama Xray:

Patient Positioning

1) **Hands** – Palms facing up on the bottom of the handlebar
2) **Feet** – Heels aligned with column, feet shoulder width apart
3) **Head** – Chin on chinrest, and align teeth in the grooves of the bite stick

Patient Instructions

1) Swallow and position ENTIRE tongue to the roof of your mouth
2) Breathe through your nose
3) Close your eyes
4) Remain still for 30 seconds

01-V. TMJ Positioning Appliances and Laser Lights

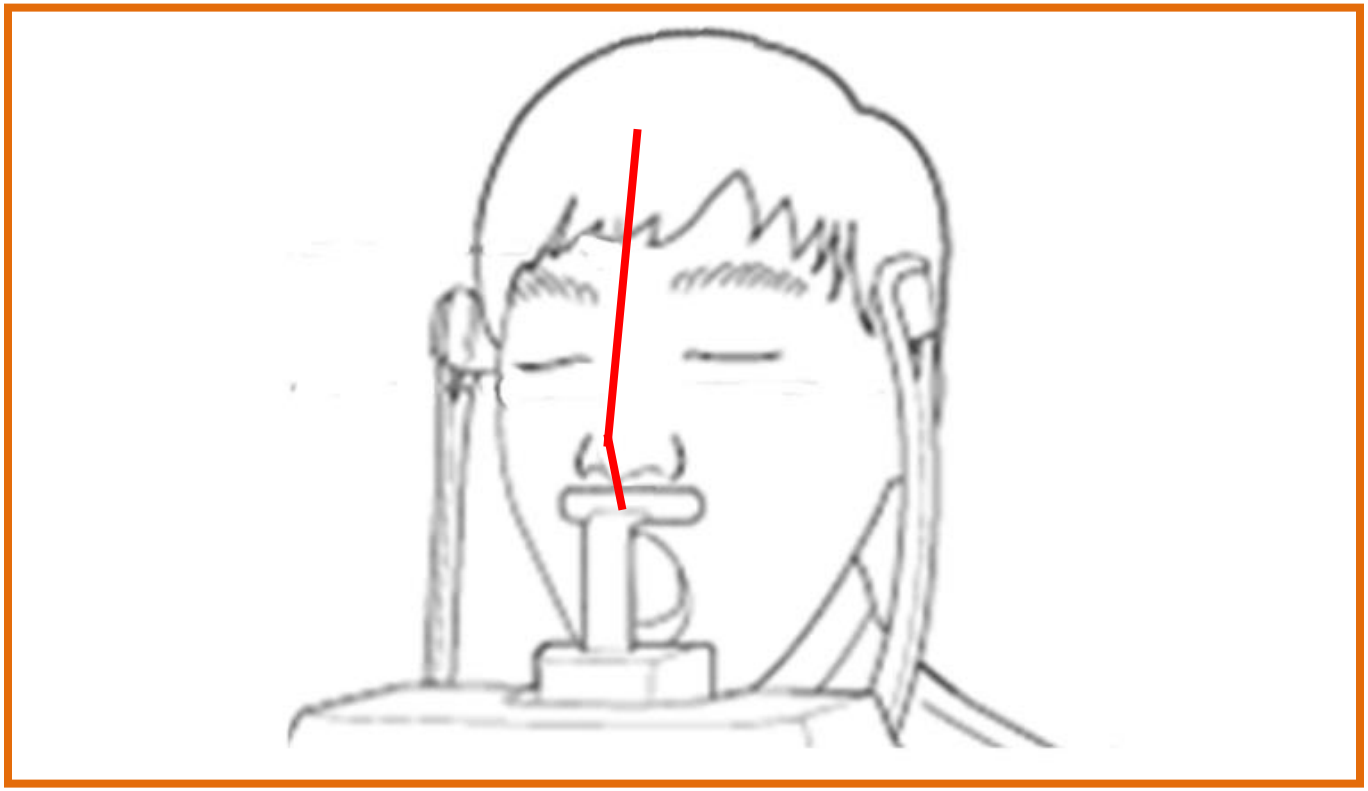
TMJ:

TMJ Appliance with Sinus/TMJ Chinrest

Capture Right and Left Condyles (4 View - Open and Closed)

01-V. TMJ Positioning Appliances and Laser Lights

TMJ OBJECTIVE : *Capture Right and Left Condyles:*



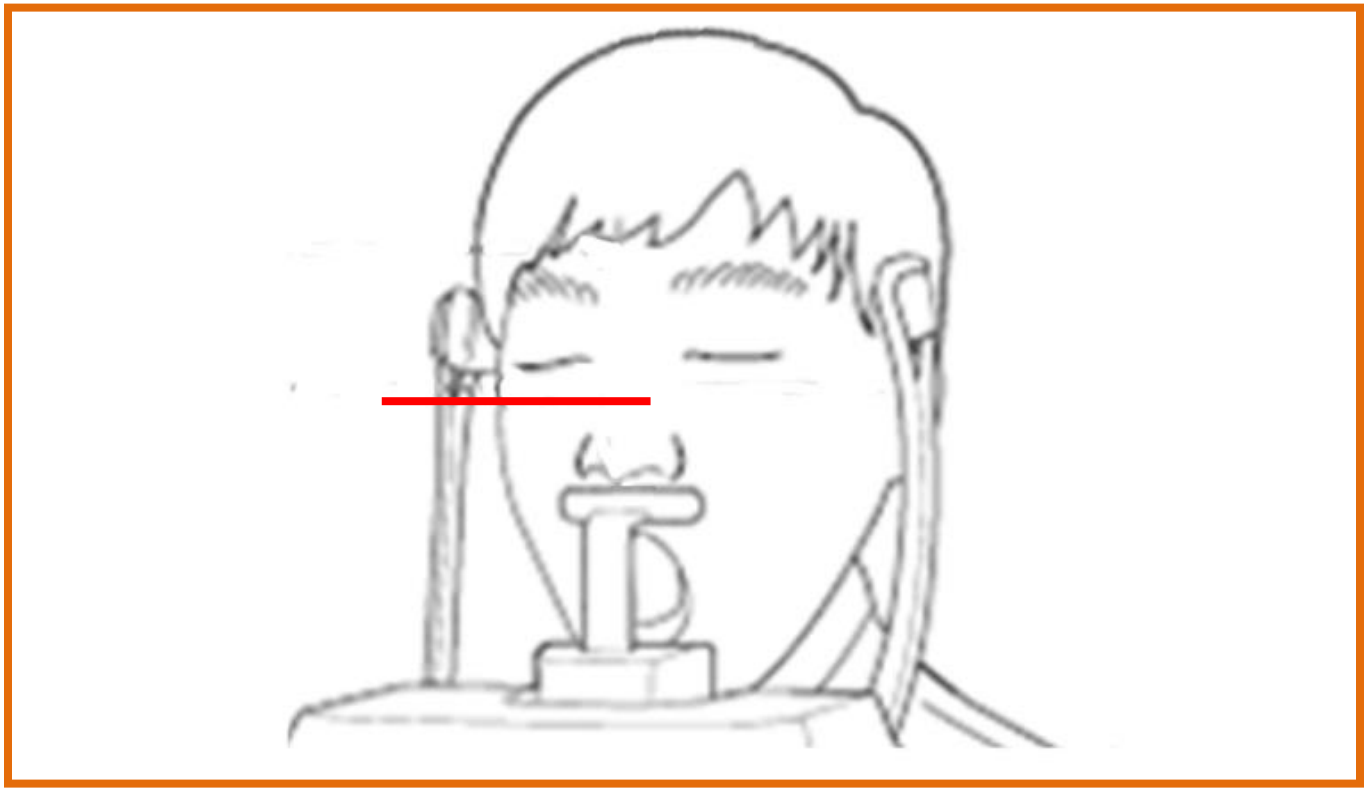
Mid-Sagittal Vertical Laser Light:

- Centered between the Eyebrows

- Center of the Philtrum

01-V. TMJ Positioning Appliances and Laser Lights

TMJ OBJECTIVE : *Capture Right and Left Condyles:*



Horizontal (Frankfurt) Laser Light:

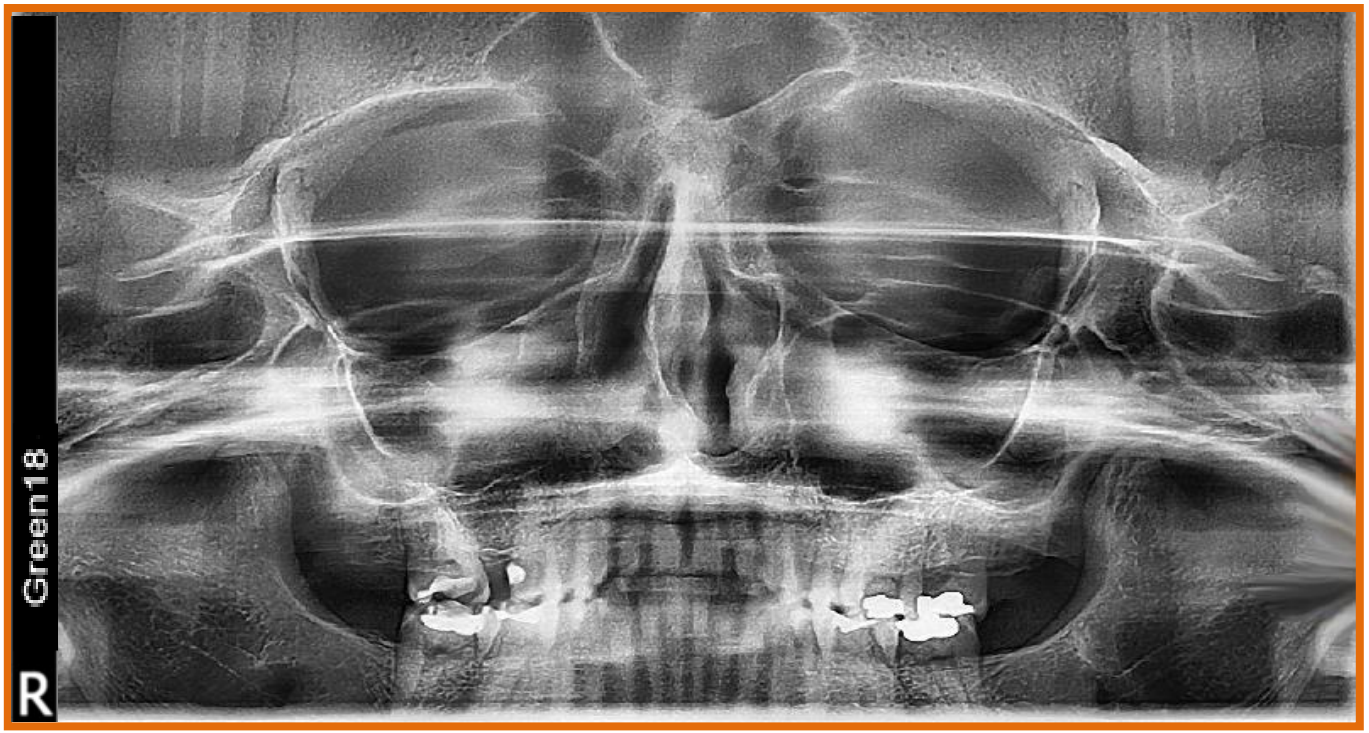
Top of Tragus (EAM)

Bottom of the Orbital Rim

01-VI. Sinus Positioning Appliances and Laser Lights

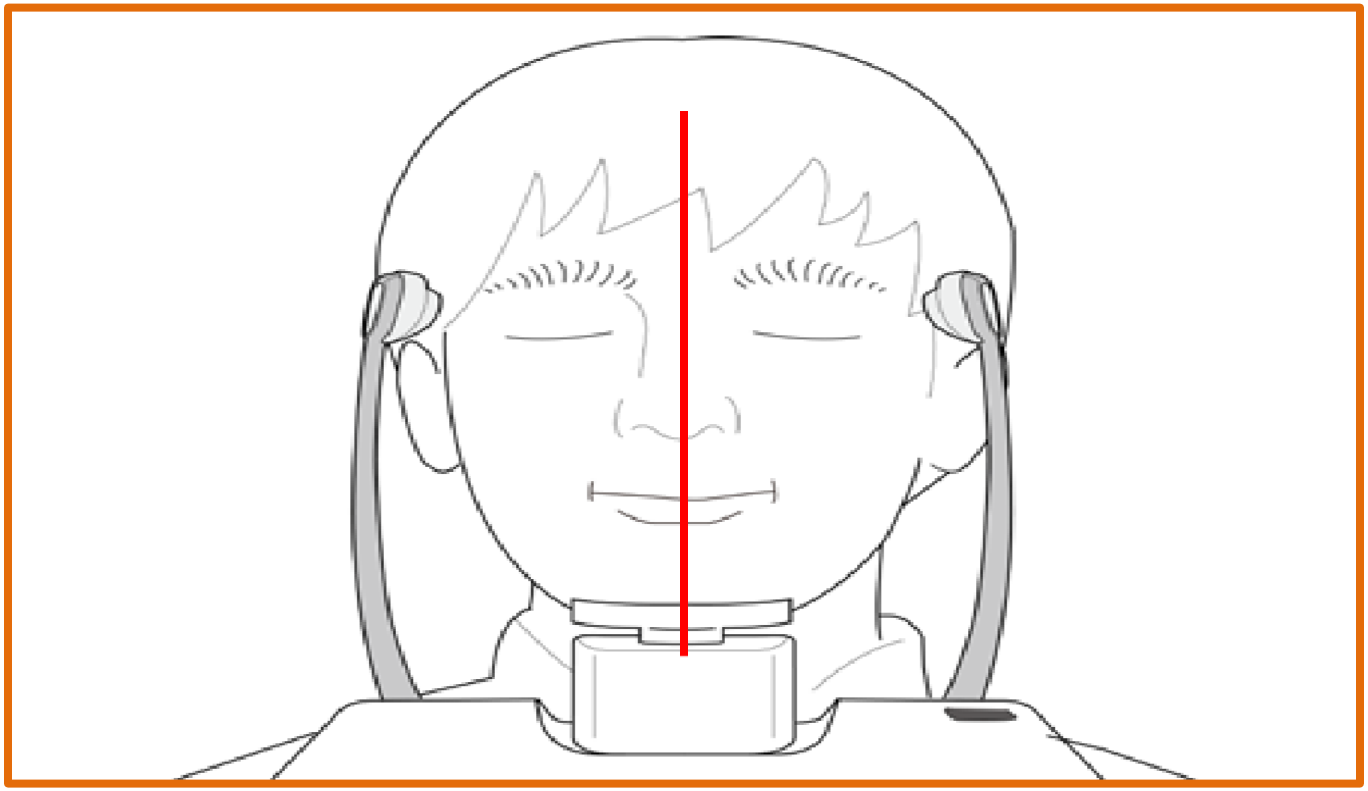
Sinus:

Sinus/TMJ Appliance with Low Profile Chinrest



01-VI. Sinus Positioning Appliances and Laser Lights

SINUS OBJECTIVE : *"Open View" of Sinus Cavity*



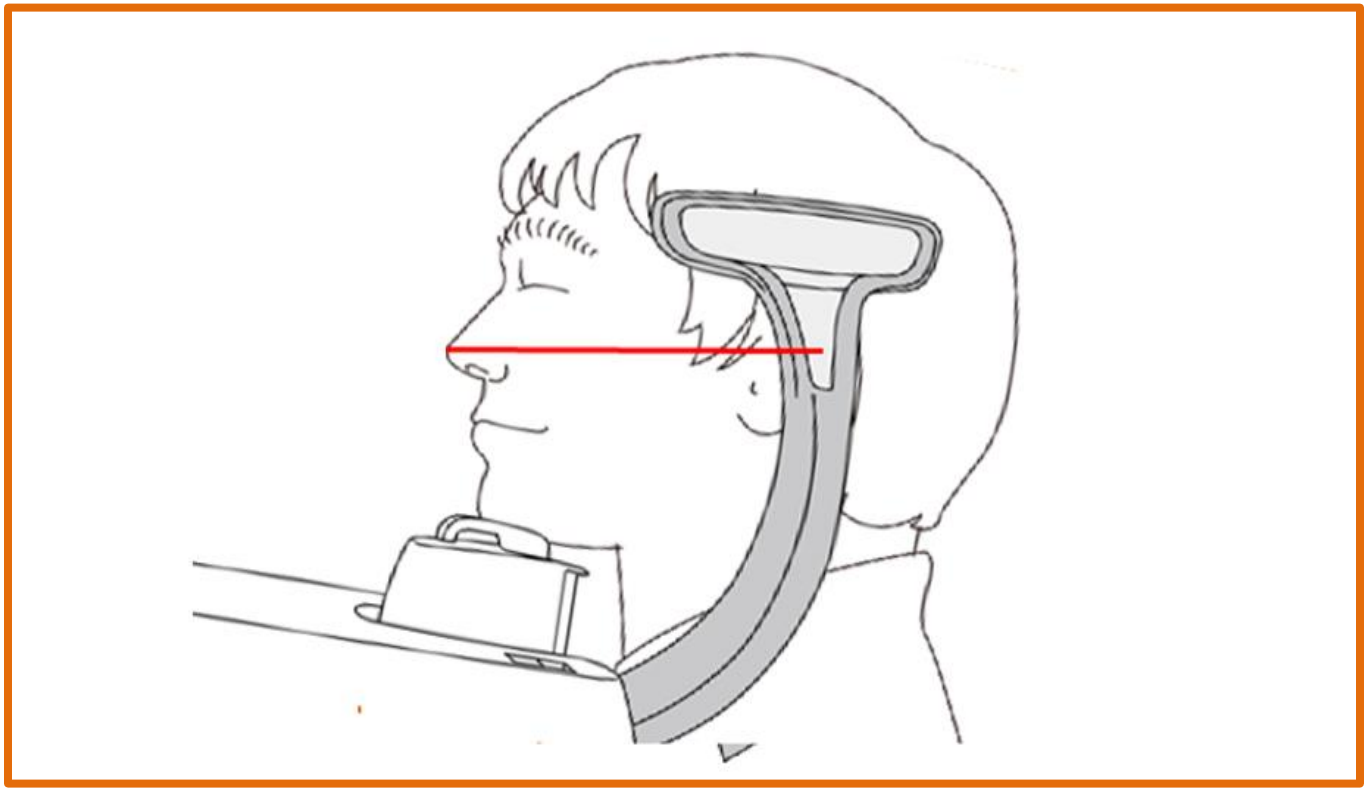
Mid-Sagittal Vertical Laser Light:

- Centered between the Eyebrows

- Center of Philtrum

01-VI. Sinus Positioning Appliances and Laser Lights

SINUS OBJECTIVE : *"Open View" of Sinus Cavity*



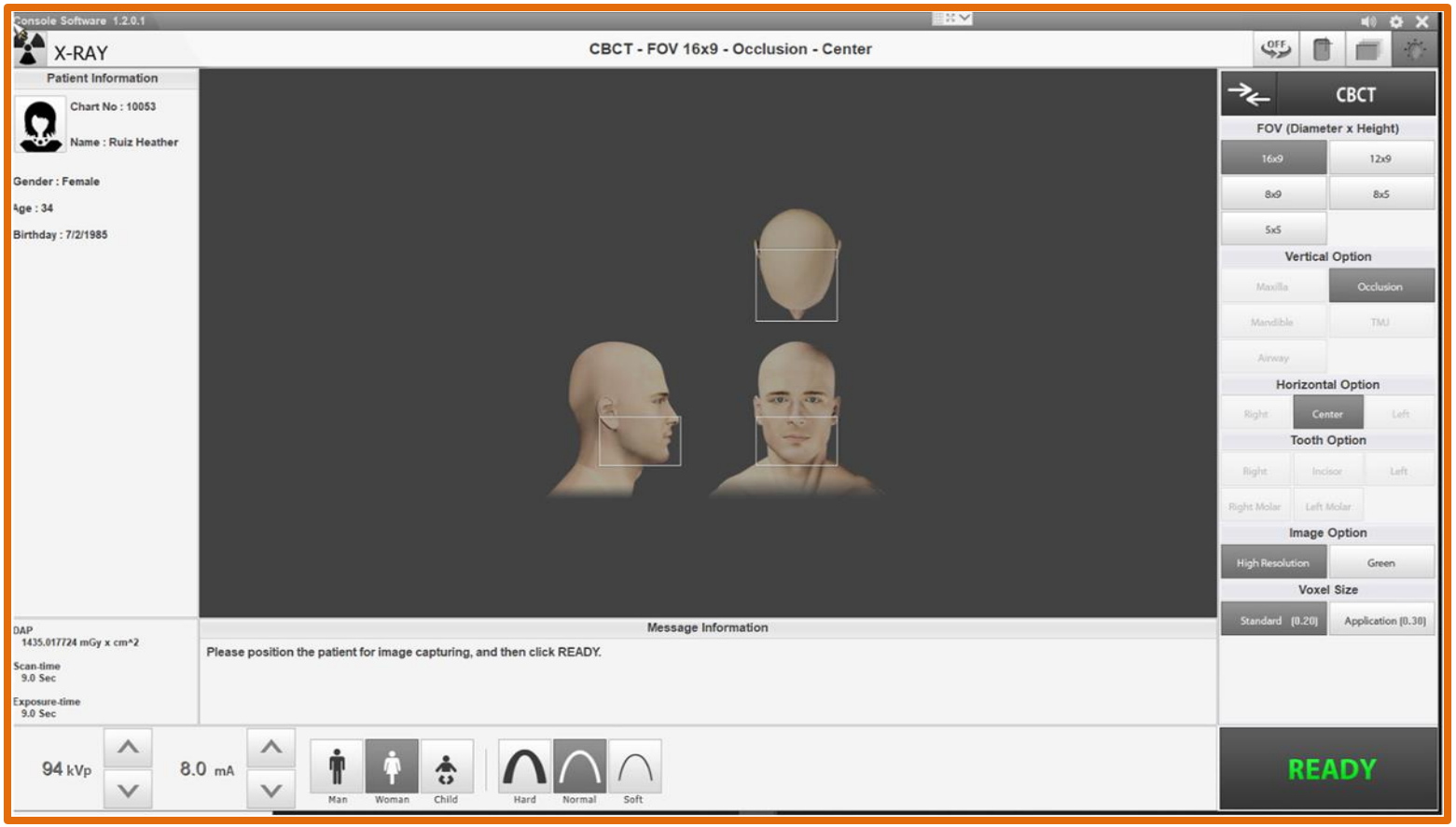
Horizontal (Frankfurt) Laser Light

- Top of the Ear

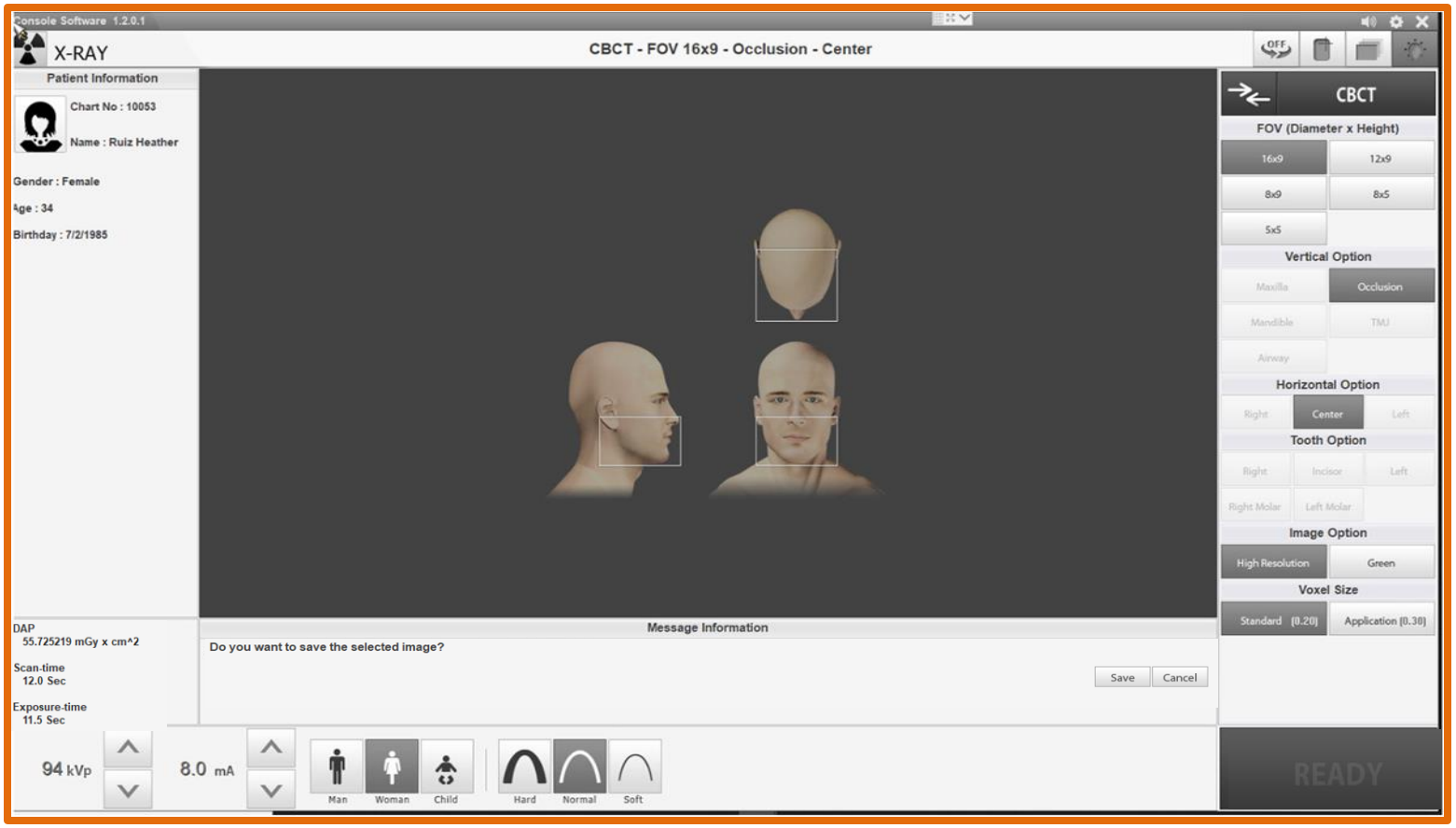
- Tip of the Nose

3D (CBCT) Modality

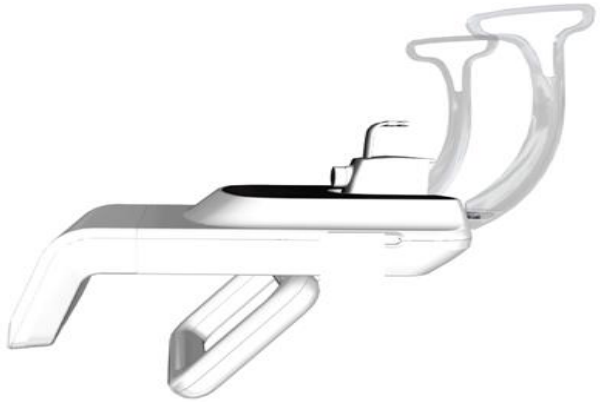
3D Image Capture Software – *Pre-Capture Options:*



3D Image Capture Software – *Post Capture Options:*

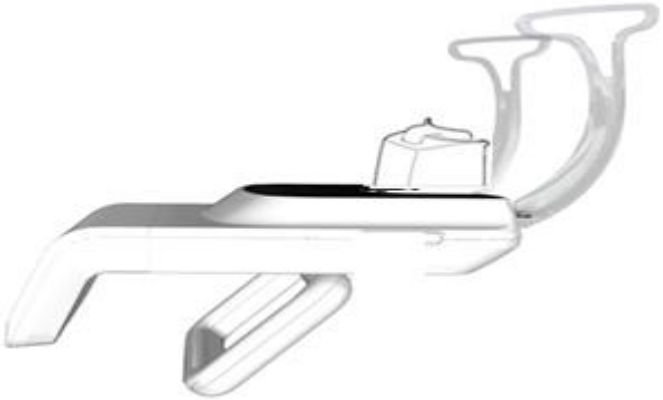


02-II. 3D Positioning Appliances and Laser Lights



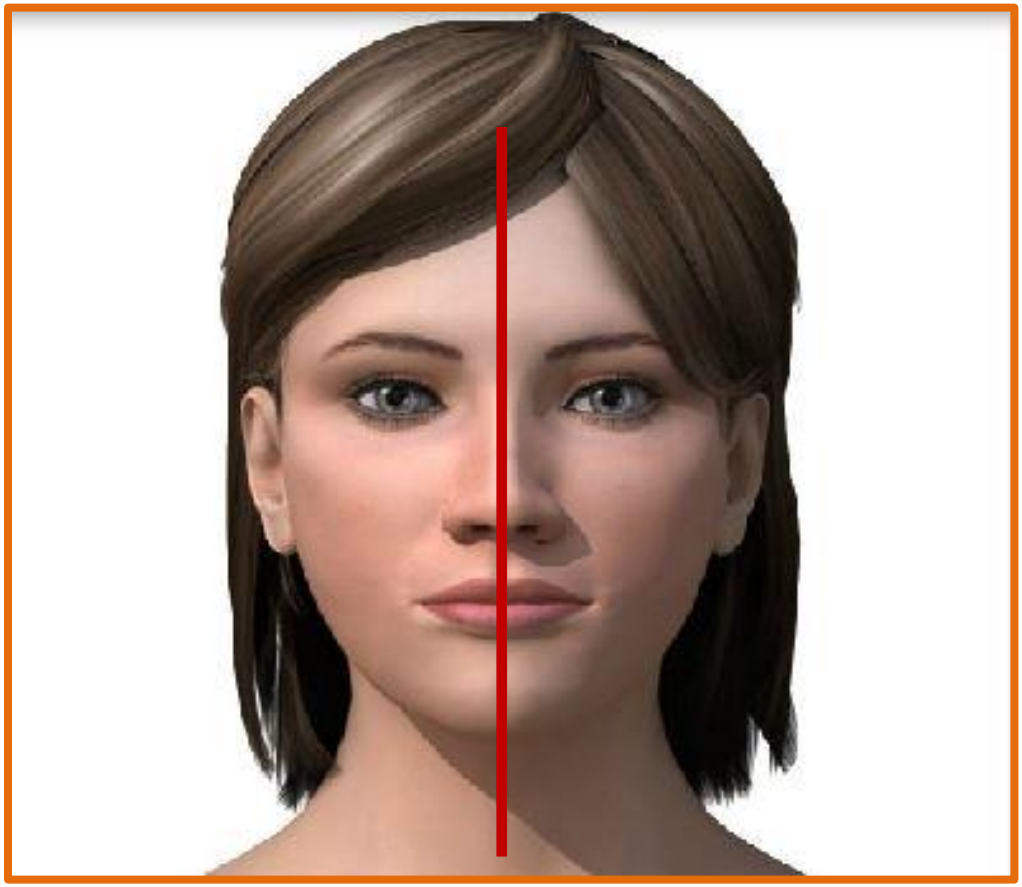
Chin Rest with Bite Stick

And depending on scan protocol…(i.e. Edentulous, Full Occlusion and Airway)



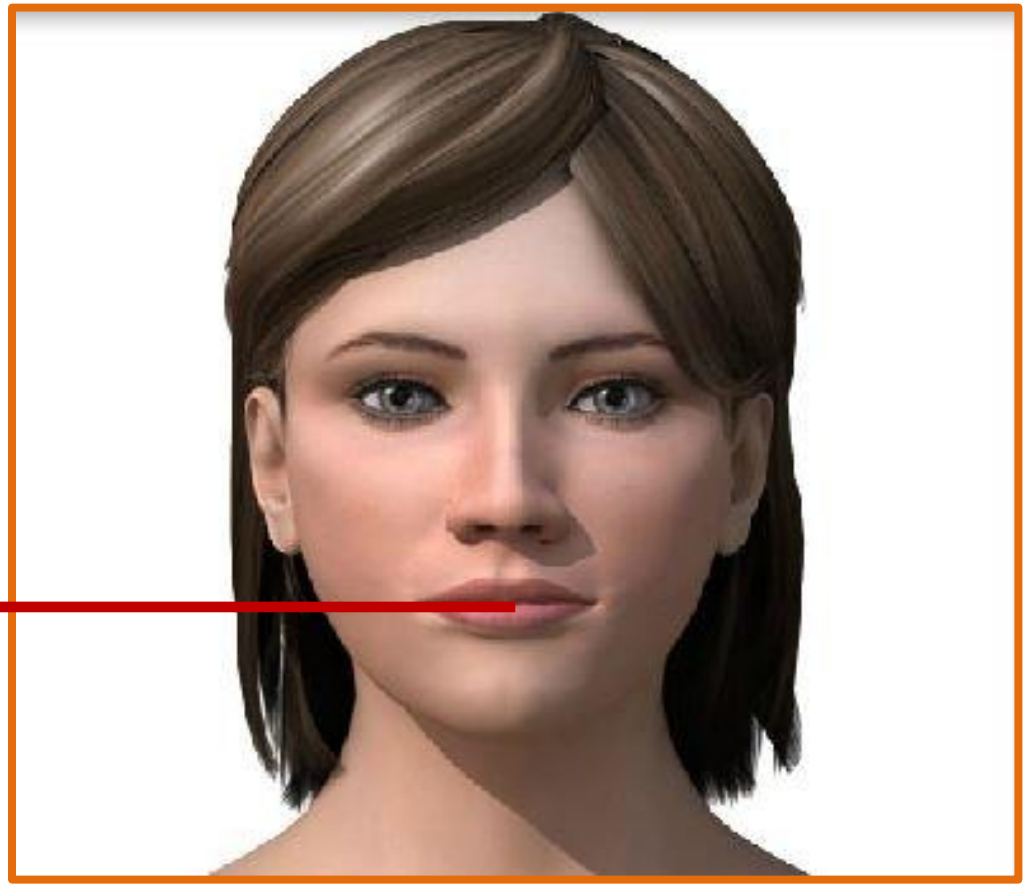
Chin Rest Only or with 3D Chin Cup

All CBCT Scans



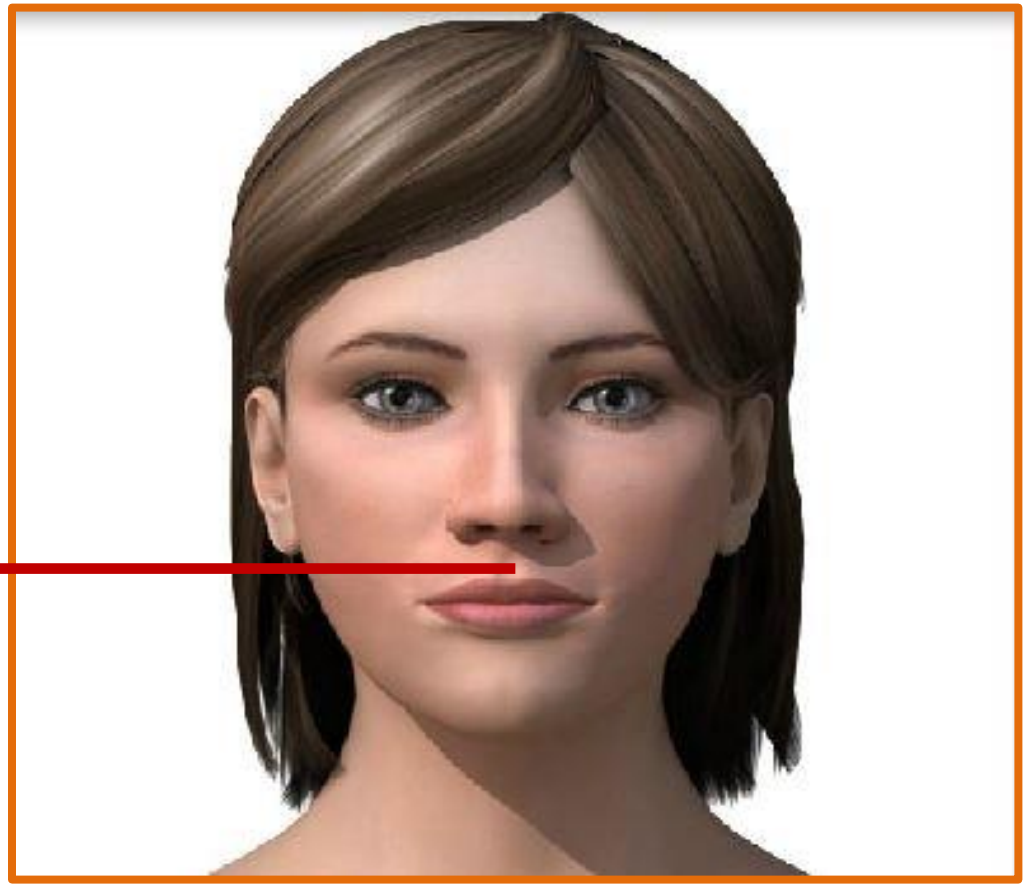
Align Sagittal laser light thru center of the anatomy

ROI Objective: *Occlusal (Dual) Arch*



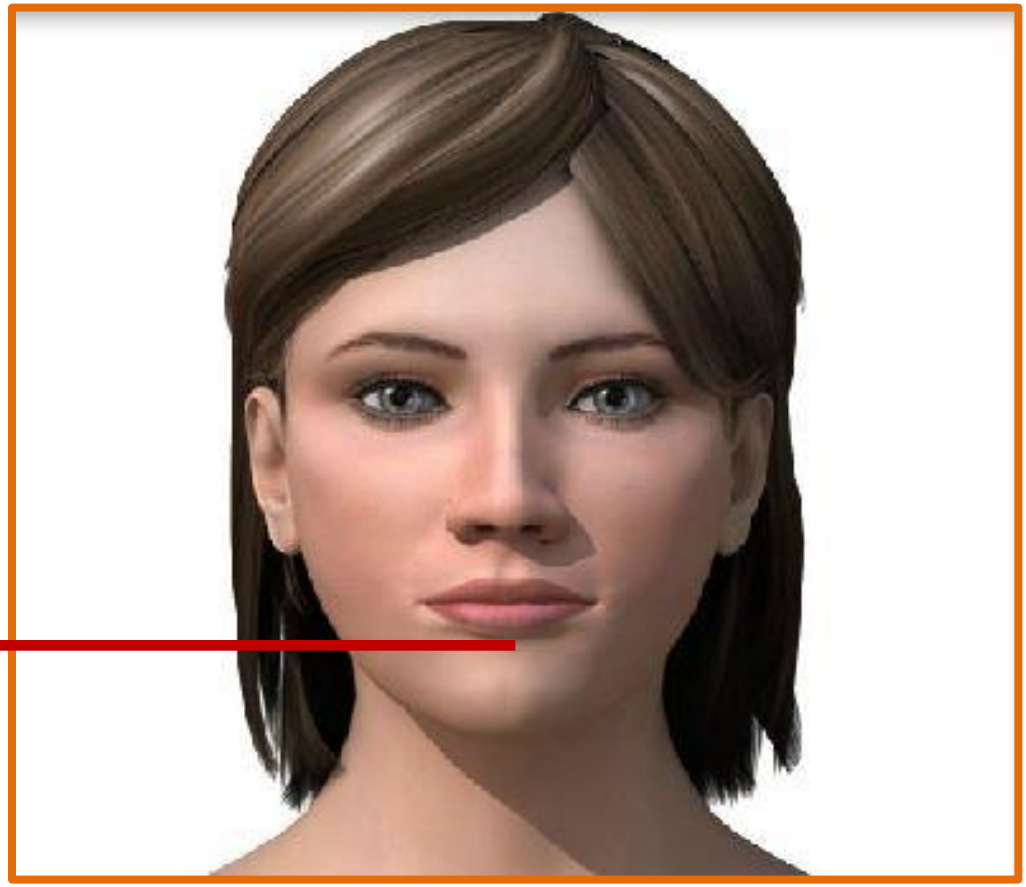
Axial Light will project between Upper and Lower Lips (16x09, 12x09, 08x09)

ROI Objective: *Maxillary Arch*



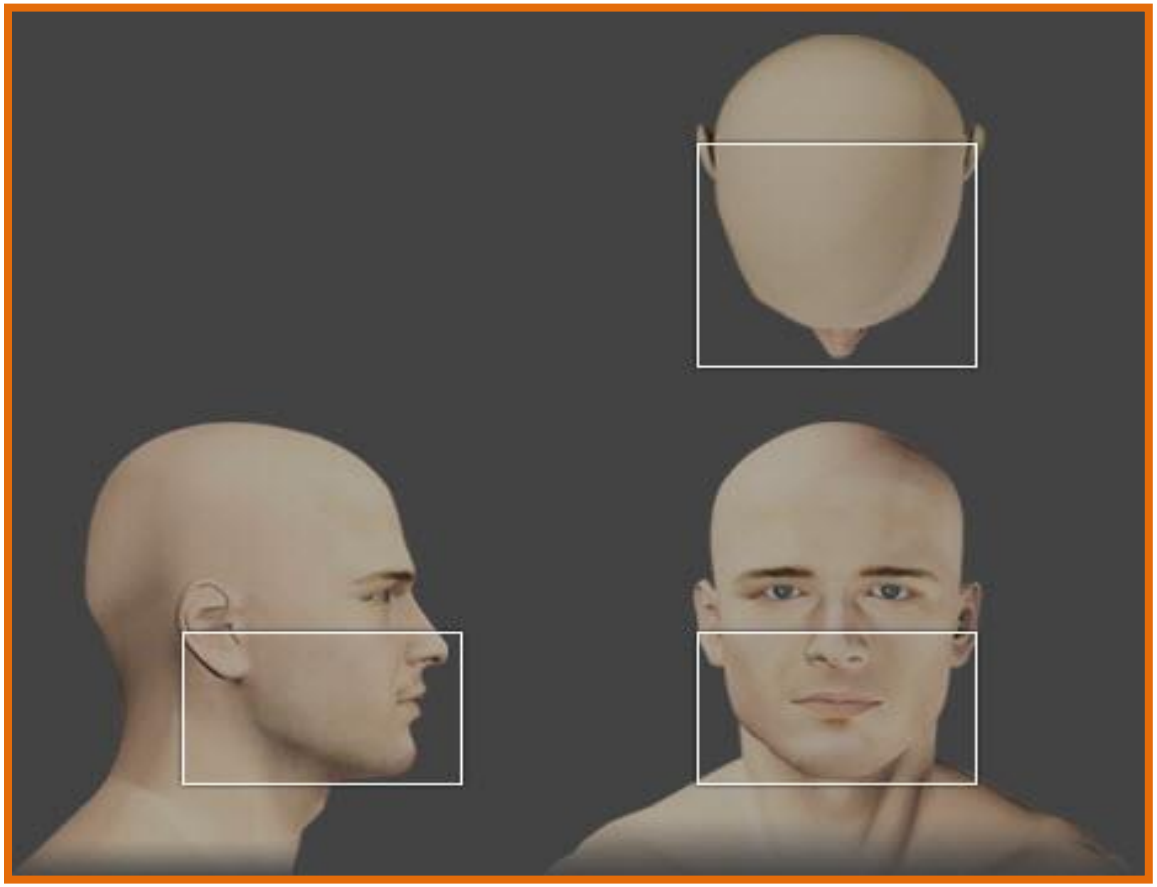
Axial Light will project near Upper Lip (8x5 and 5x5 Only)

ROI Objective: *Mandibular Arch*



Axial Light will project near Lower Lip (8x5 and 5x5 Only)

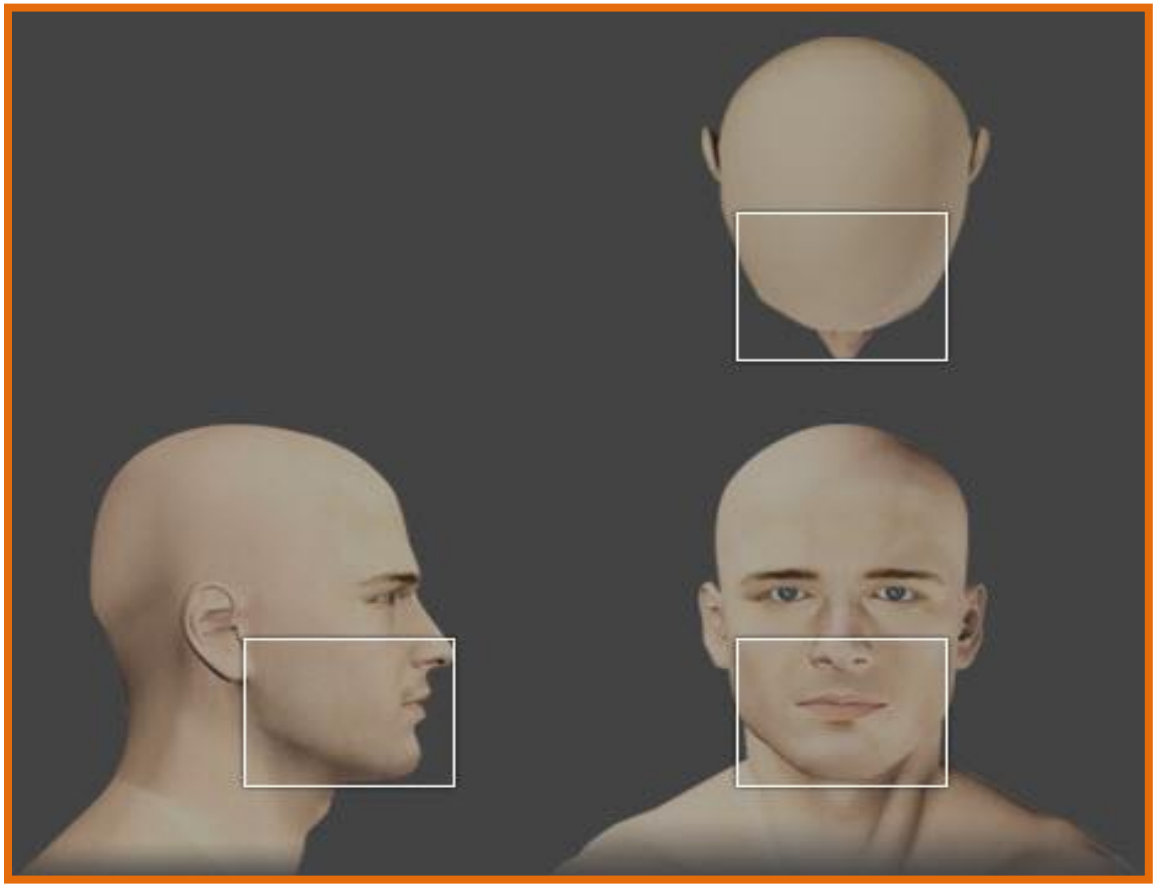
Field Of View (FOV) : 16 x 09 cm



ROI includes - ***Dentition, Airway, TMJ***

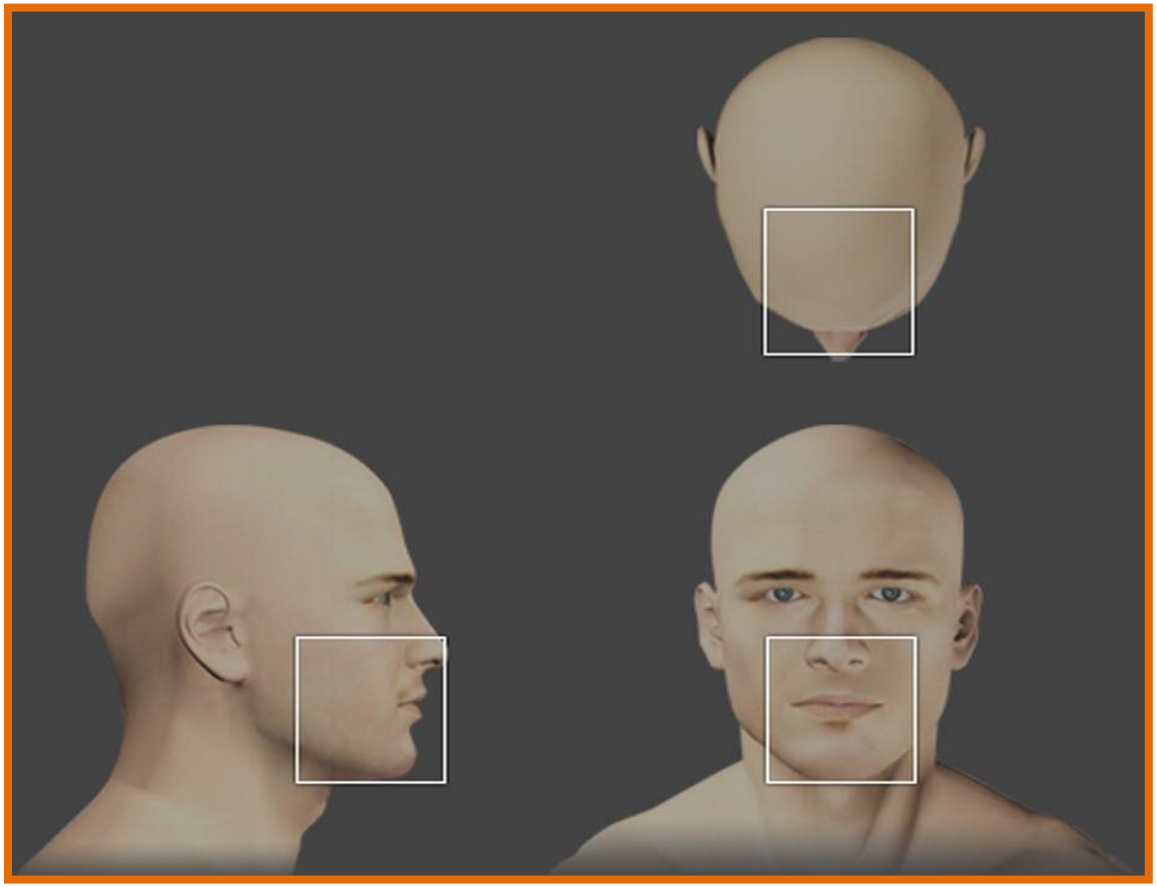
02-III. Field Of View and Regions Of Interest

Field Of View (FOV) : 12 x 09 cm



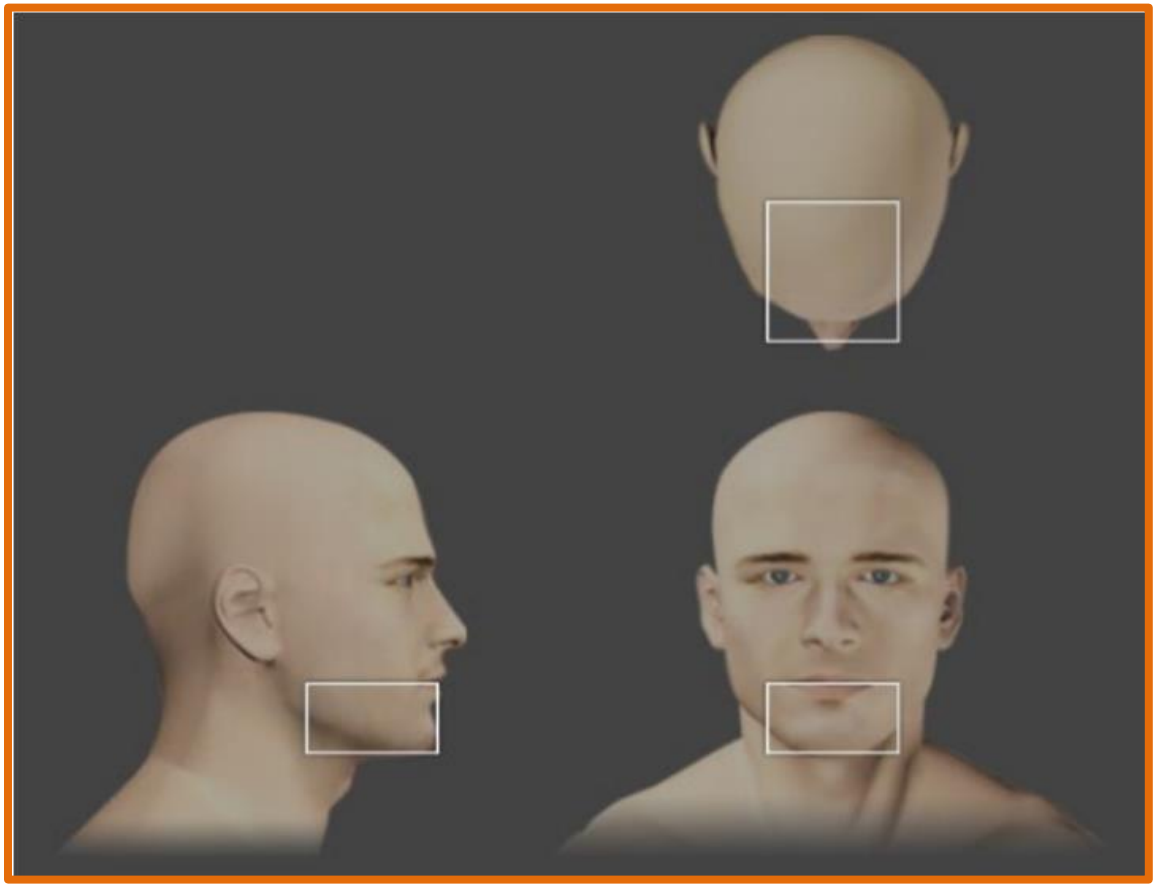
ROI Includes: ***Entire Dentition with 3rds*** ***(if applicable)***

Field Of View (FOV) : 08 x 09 cm



ROI Includes: ***Central Dentition, and TMJ (R or L)***

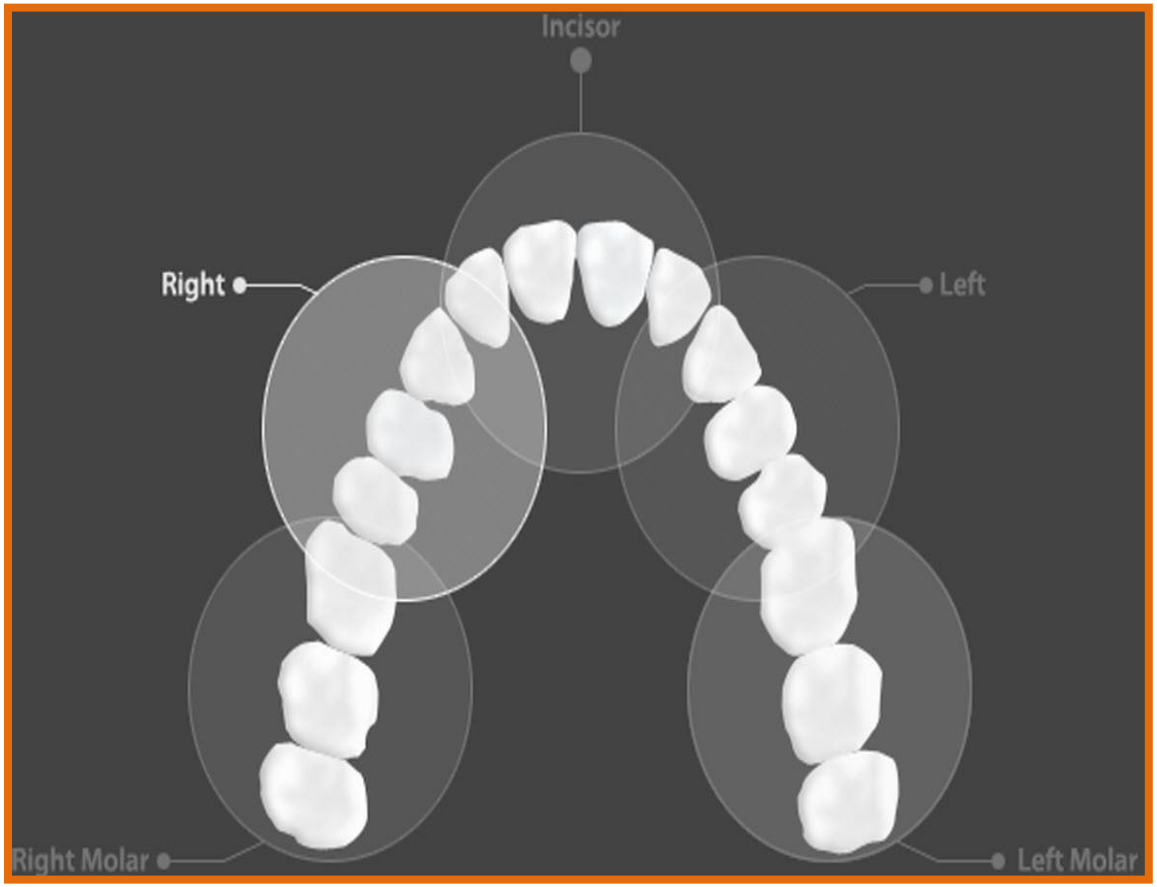
Field Of View (FOV) : 08 x 05 cm



ROI Includes: Maxilla/ Mandible - *Right, Center, Left*

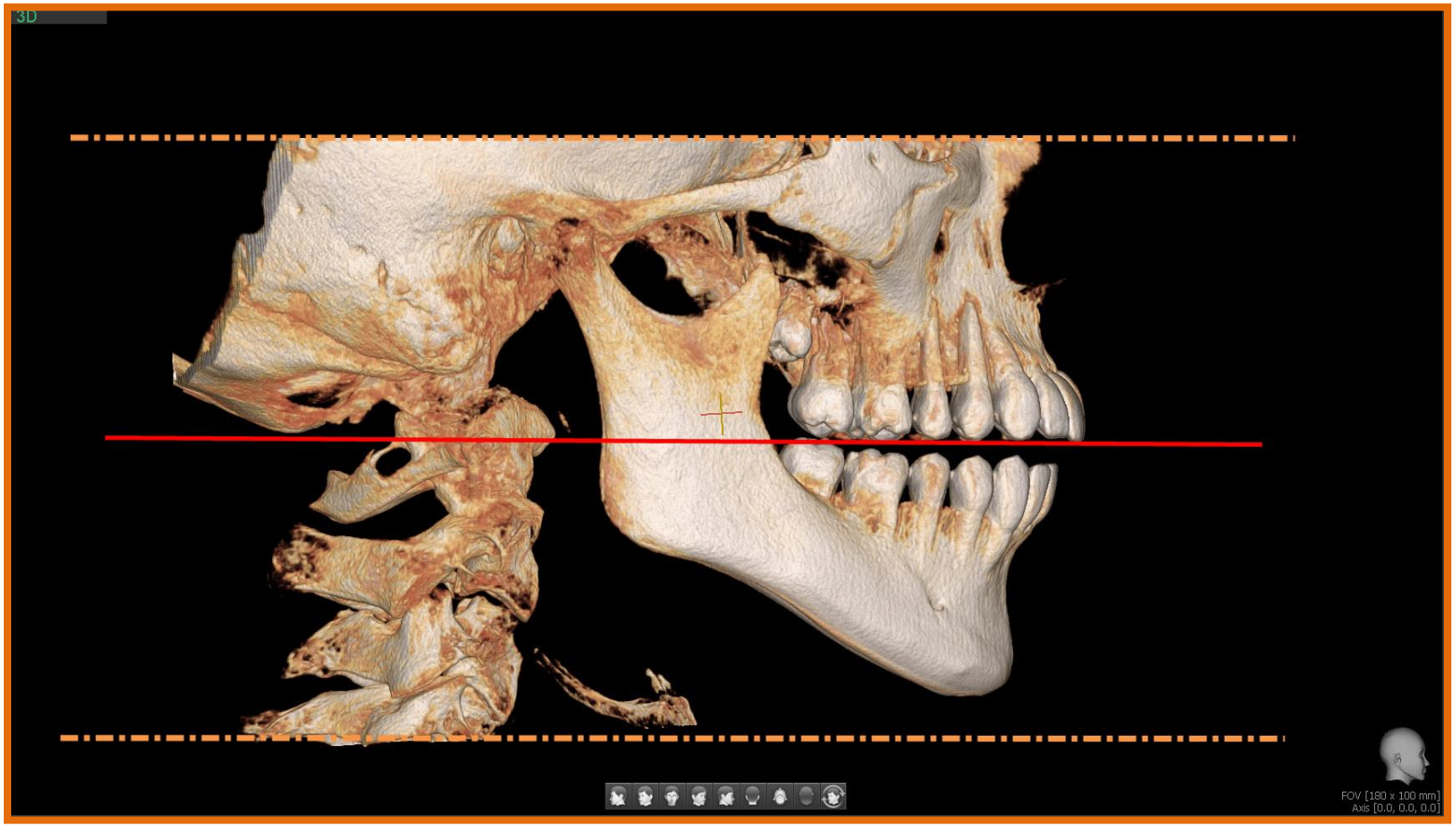
02-III. Field Of View and Regions Of Interest

Field Of View (FOV) : 05 x 05 cm



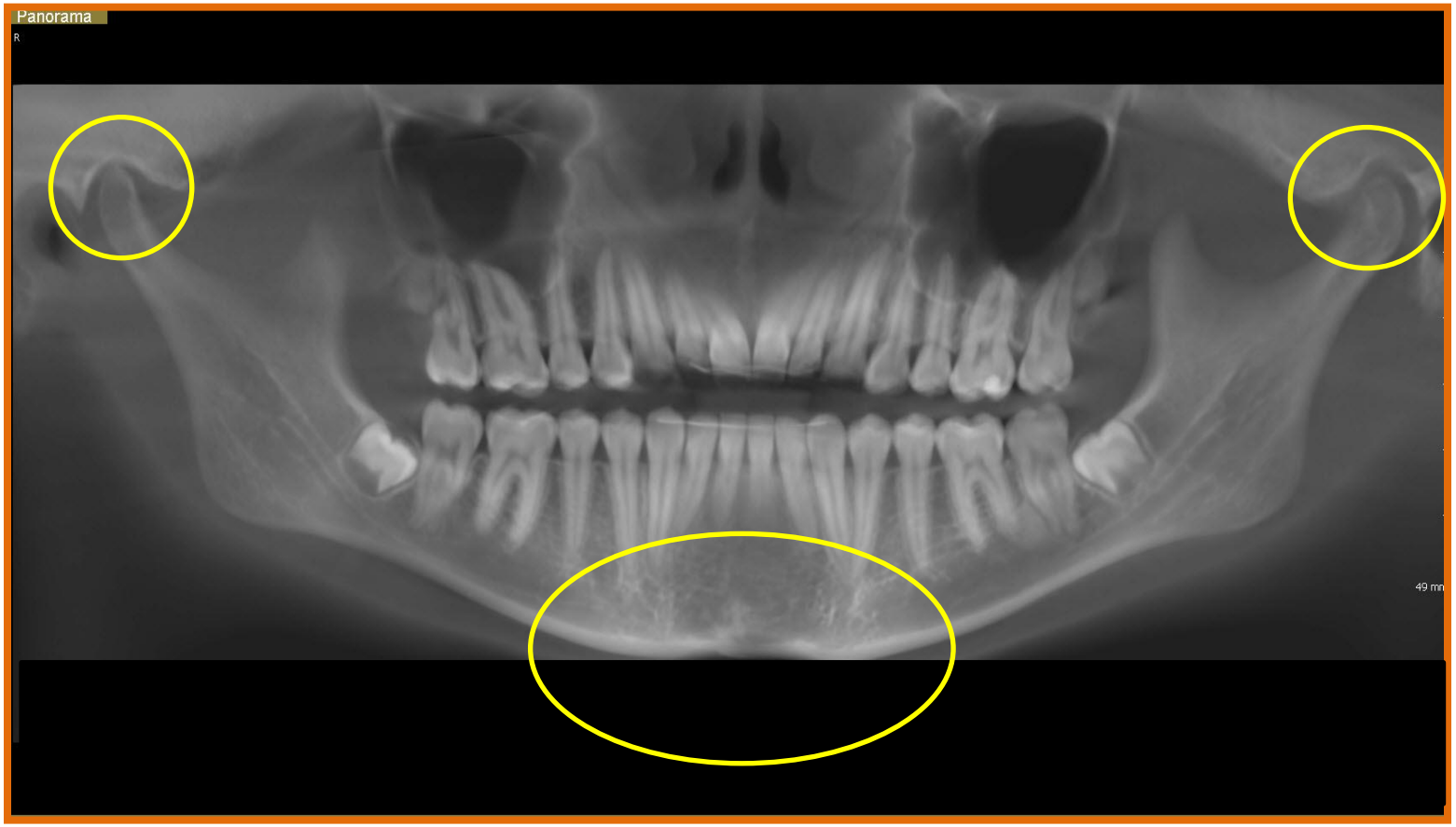
ROI Includes: ***Right Molar, Right, Incisor, Left and Left Molar***

Correct Patient Positioning…



…captures an accurate 3D Scan.

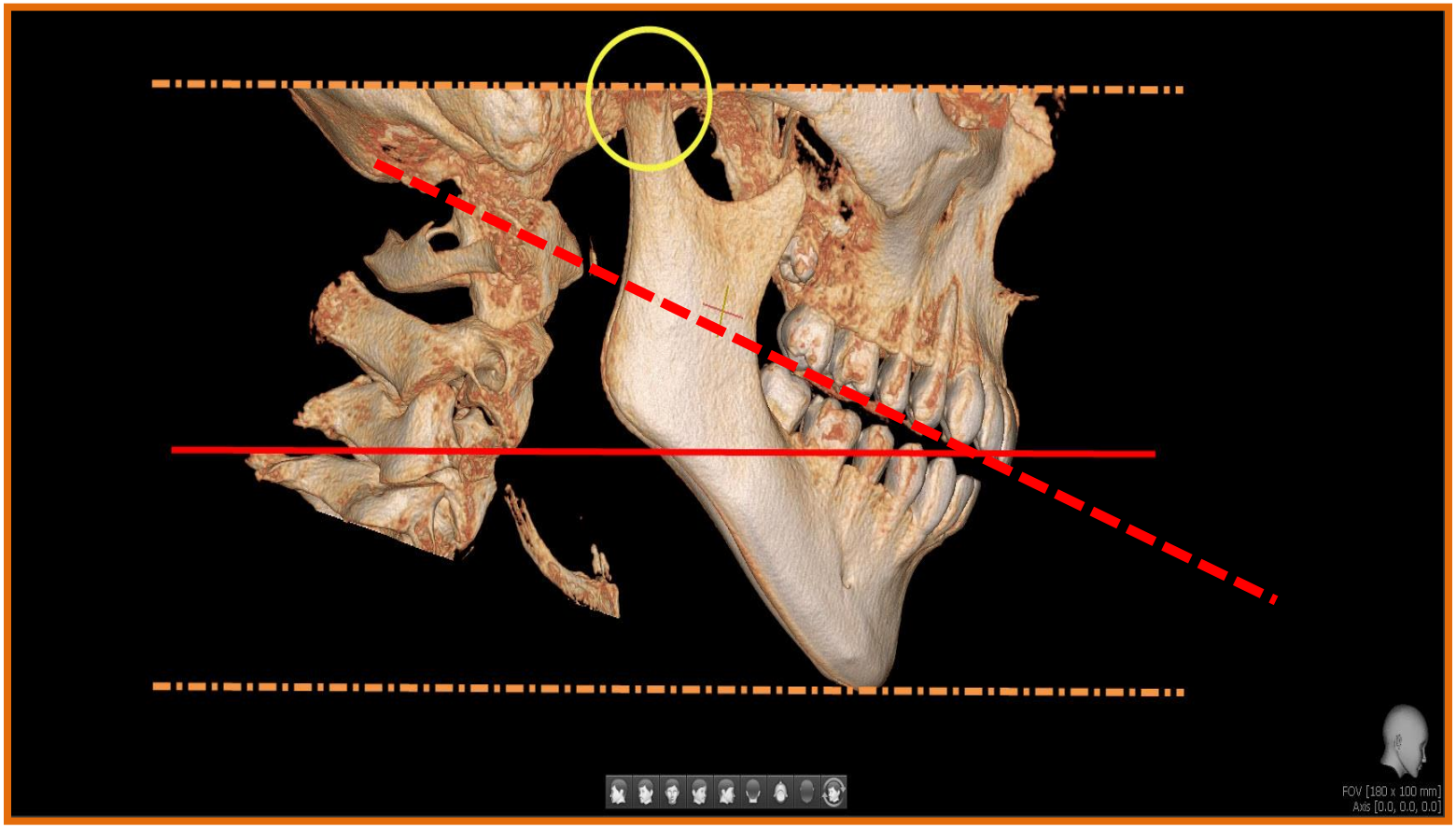
Pan Curve Based on Adjusted Axial Pane



...captures an accurate 3D Scan.

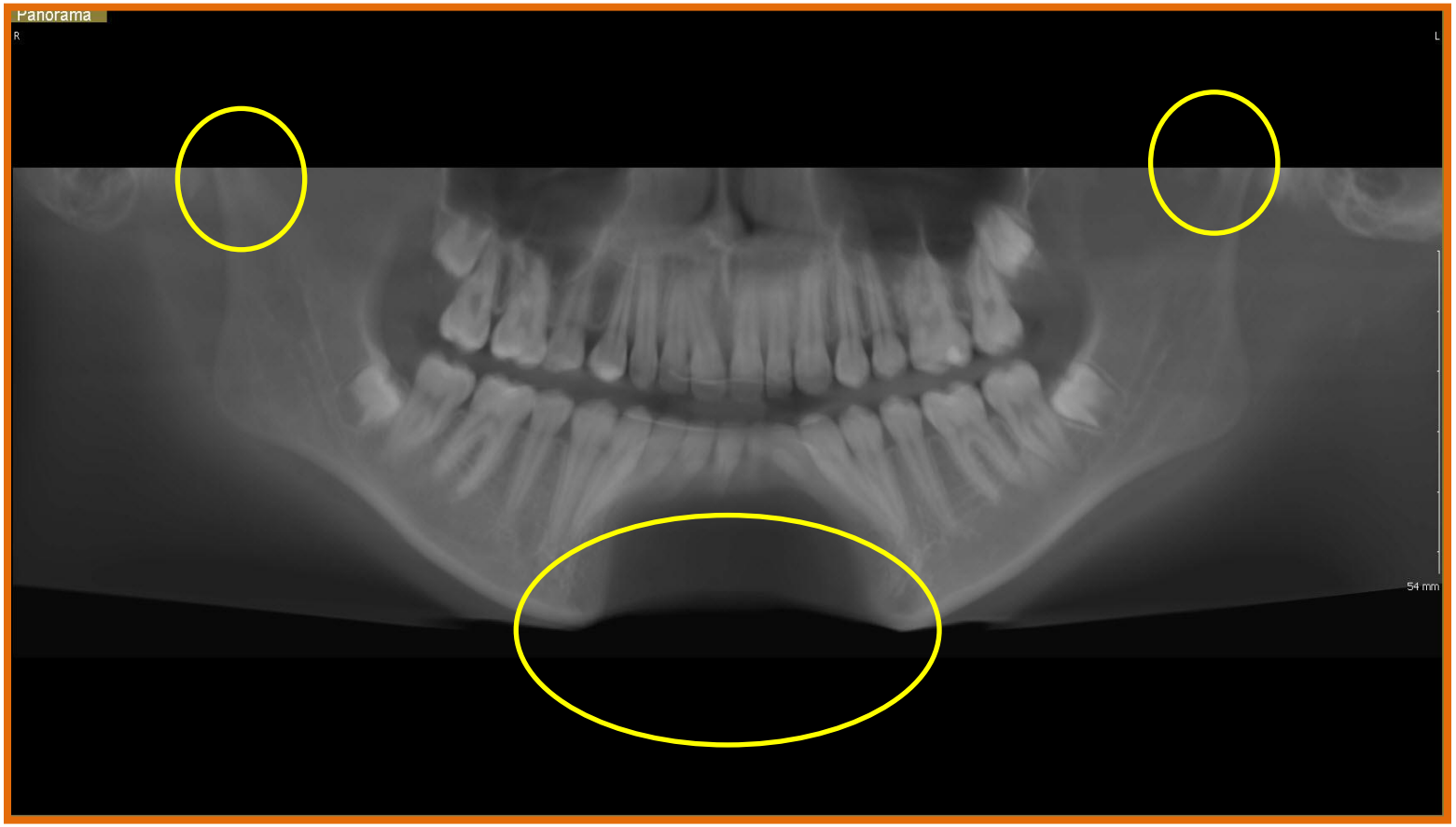
02-IV. Proper vs Improper Positioning

Incorrect Patient Positioning…



…may capture an unusable CBCT scan

Pan Curve Based on Non-Adjusted Axial Pane



…may capture an unusable CBCT scan

02-V. Green CT 2 – CBCT Operator Positioning Guide

Preparation:

Remove metal objects from the neck up including: necklaces, eyeglasses, earrings, and any other metal objects including removable appliances such as: dentures, partials, & orthodontic retainers.

System Initialization and Height Adjustment:

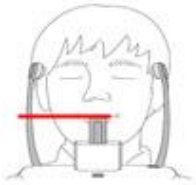
Position the patient when the red laser lights appear, and apply a fresh hygiene barrier. Elevate the imaging system approximately 2-3cm superior to final height of the patient.

Proper Vertical Position:

Patient should stand as fully upright as possible with the feet positioned approx. 1” forward of vertical. Instruct the patient hold firmly to the bottom portion of the bar with the palms facing to wards the ceiling. Chin on chin rest with teeth aligned on the bite stick notch.

Mid-Sagittal Laser Guide Light:

- Mid-Sagittal Guide light aligns with the center of the eyebrows the philtrum. (below the nose)



Axial Laser Guide Light:

Dual Arch – Verify Axial guide light projects at occlusal plane
Mx.\Mn. – Verify Axial guide light projects above occlusal for Mx, below the occlusal for Mn.

02-V. Green CT 2 – CBCT Patient Instruction Guide

To Patient:

Please follow these instructions to capture a CBCT Scan:

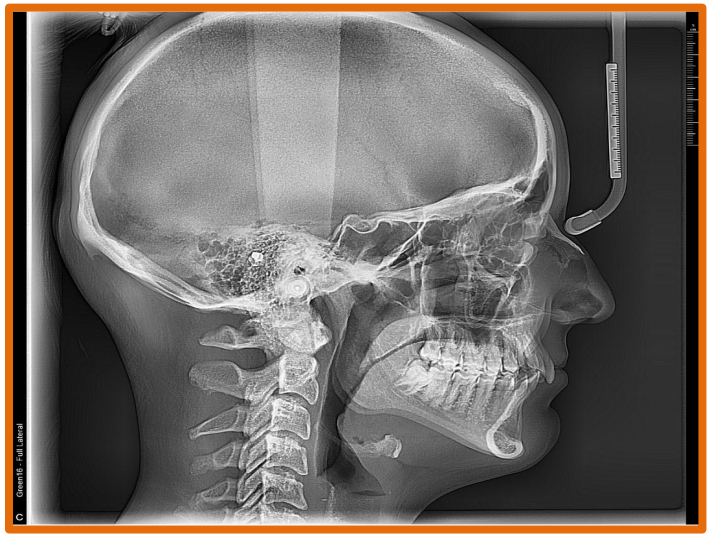
Patient Positioning

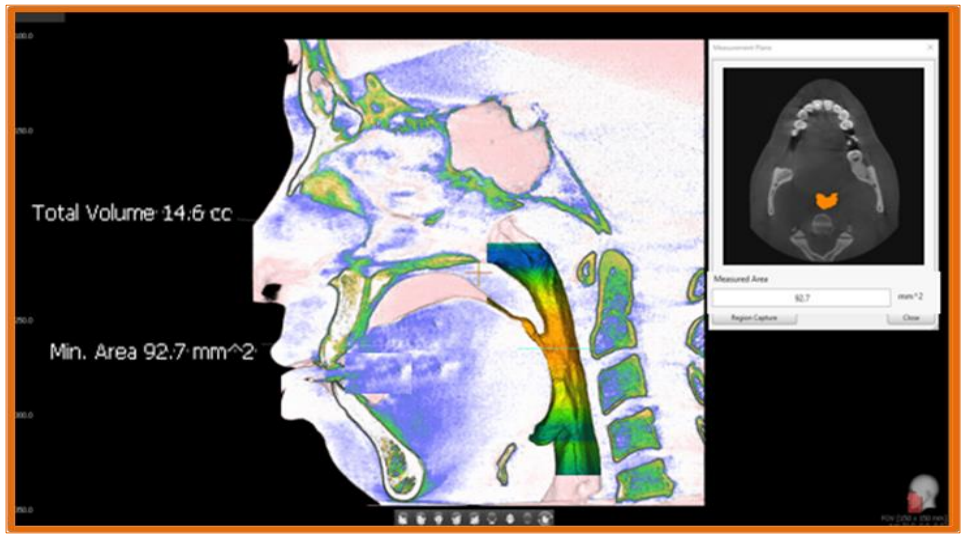
1) **Hands** – Palms facing up on the bottom of the handlebar
2) **Feet** – Heels aligned with column, feet shoulder width apart
3) **Head** – Chin on chinrest, and align teeth in the grooves of the bite stick

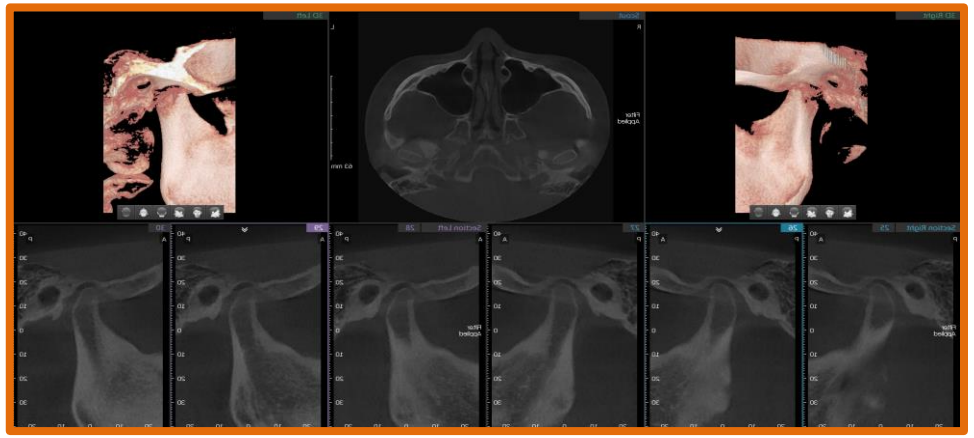
Patient Instructions

1) Swallow and keep tongue at rest in your mouth
2) Breathe slowly through your nose
3) Close your eyes
4) Remain still for 30 seconds

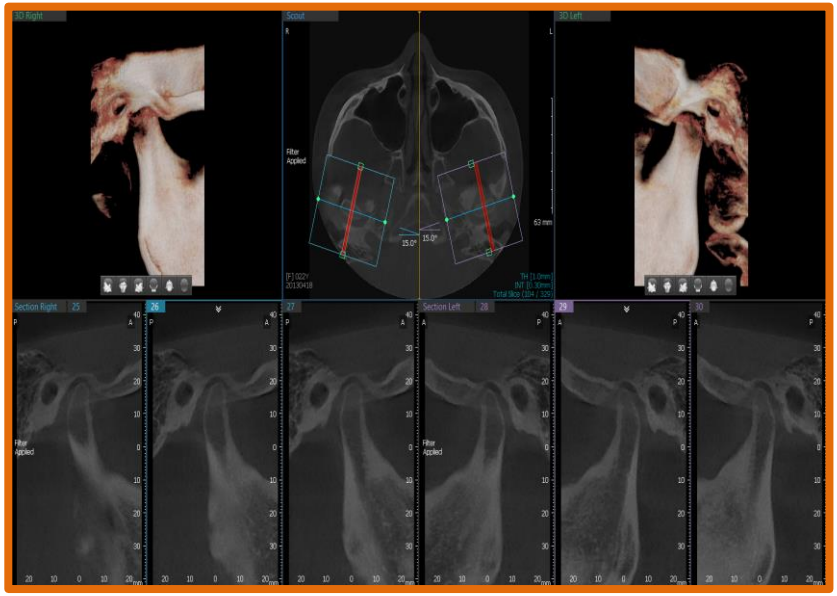
03. Addendum – Ceph, Stone Model, Ceph, Airway and TMJ

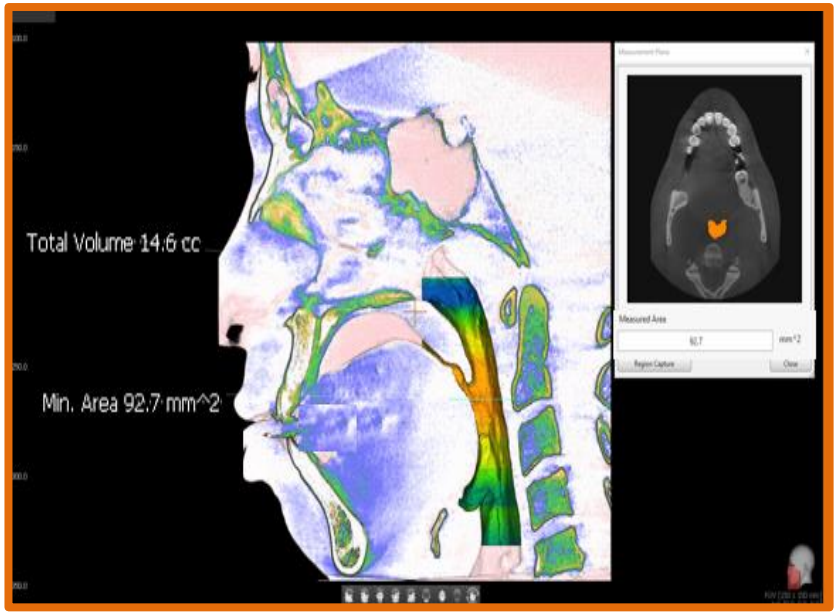






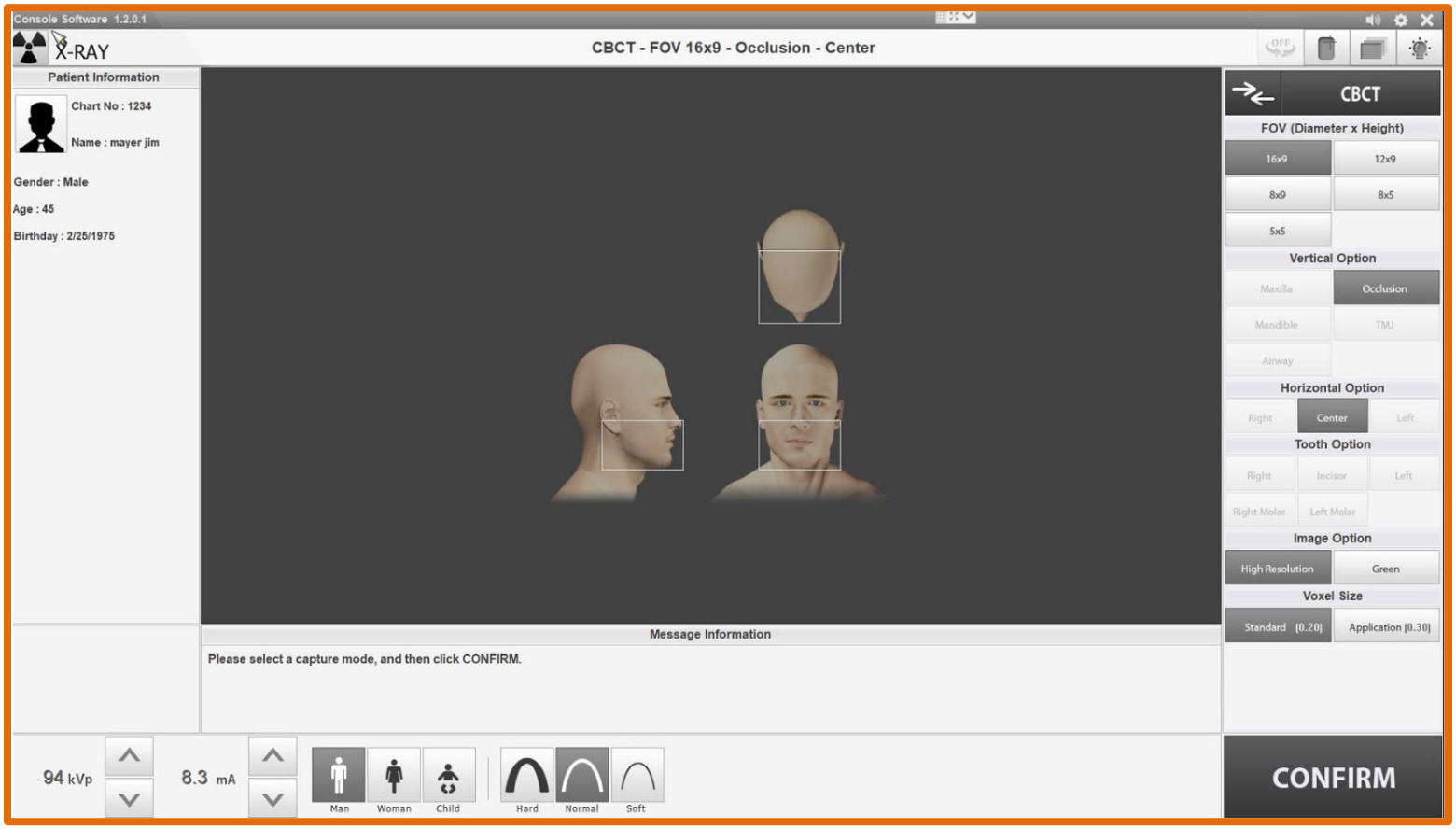
03-I. 3D TMJ/AIRWAY Scan Protocol





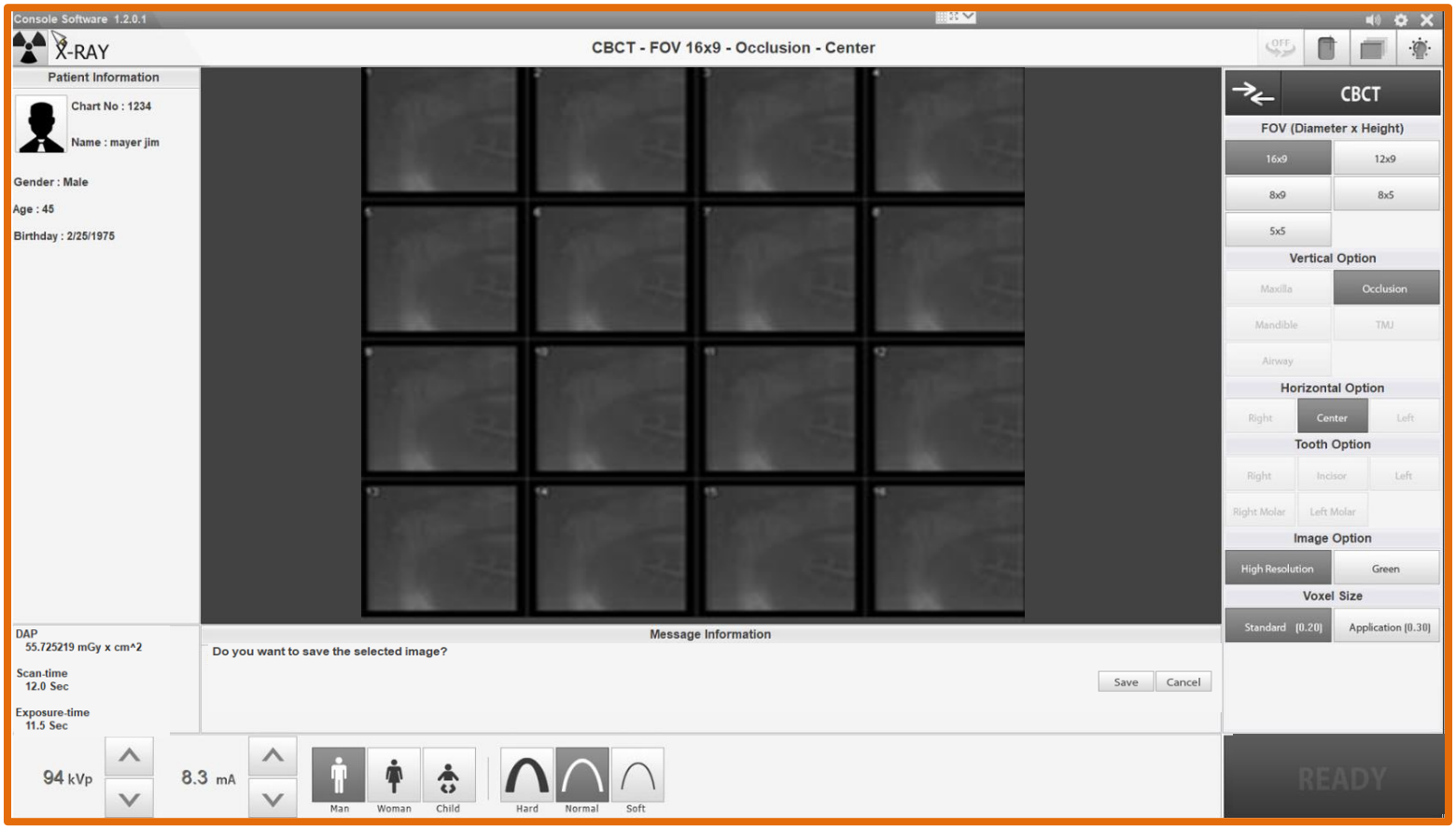
03-I. 3D TMJ/AIRWAY Scan Protocol

3D TMJ/Airway Image Capture Software – *Pre-Capture Options*:



03-I. 3D TMJ/AIRWAY Scan Protocol

3D TMJ/Airway Image Capture Software – *Post Capture Options*:



03-I. 3D TMJ/AIRWAY – Operator Positioning Guide

Preparation:

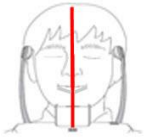
Remove metal objects from the neck up including: necklaces, eyeglasses, earrings, and any other metal objects including removable appliances such as: dentures, partials, & orthodontic retainers.

System Initialization and Height Adjustment:

Position the patient when the red laser lights appear, and apply a fresh hygiene barrier. Elevate the imaging system approximately 2-3cm superior to final height of the patient.

Proper Vertical Position:

Patient should stand as fully upright as possible with the feet positioned approx. 1” forward of vertical. Instruct the patient hold firmly to the bottom portion of the bar with the palms facing towards the ceiling



Mid-Sagittal Guide Light:

Align the Mid-Sagittal Laser light with the center of the eyebrows the philtrum above the upper lip

Axial Guide Light:

Verify Axial light projects on targeted anatomy in a vertical direction (i.e - lips for dual arch cbct)

Basic Principle of Dental CT Image Acquisition:

The Positioning lights are intended to identify a ‘target’ region, whether it’s a dual arch, or single arch or single tooth
Occlusal plane should be parallel to the floor

03-I. 3D TMJ/AIRWAY Patient Instruction Guide

To Patient:

Please follow these instructions to capture a 3D TMJ/Airway Xray:

Patient Positioning

1) **Hands** – Palms facing up on the bottom of the handle bar
2) **Feet** – Heels aligned with column, feet shoulder width apart
3) **Head** – Chin on chinrest, and align teeth in the grooves of the bite stick

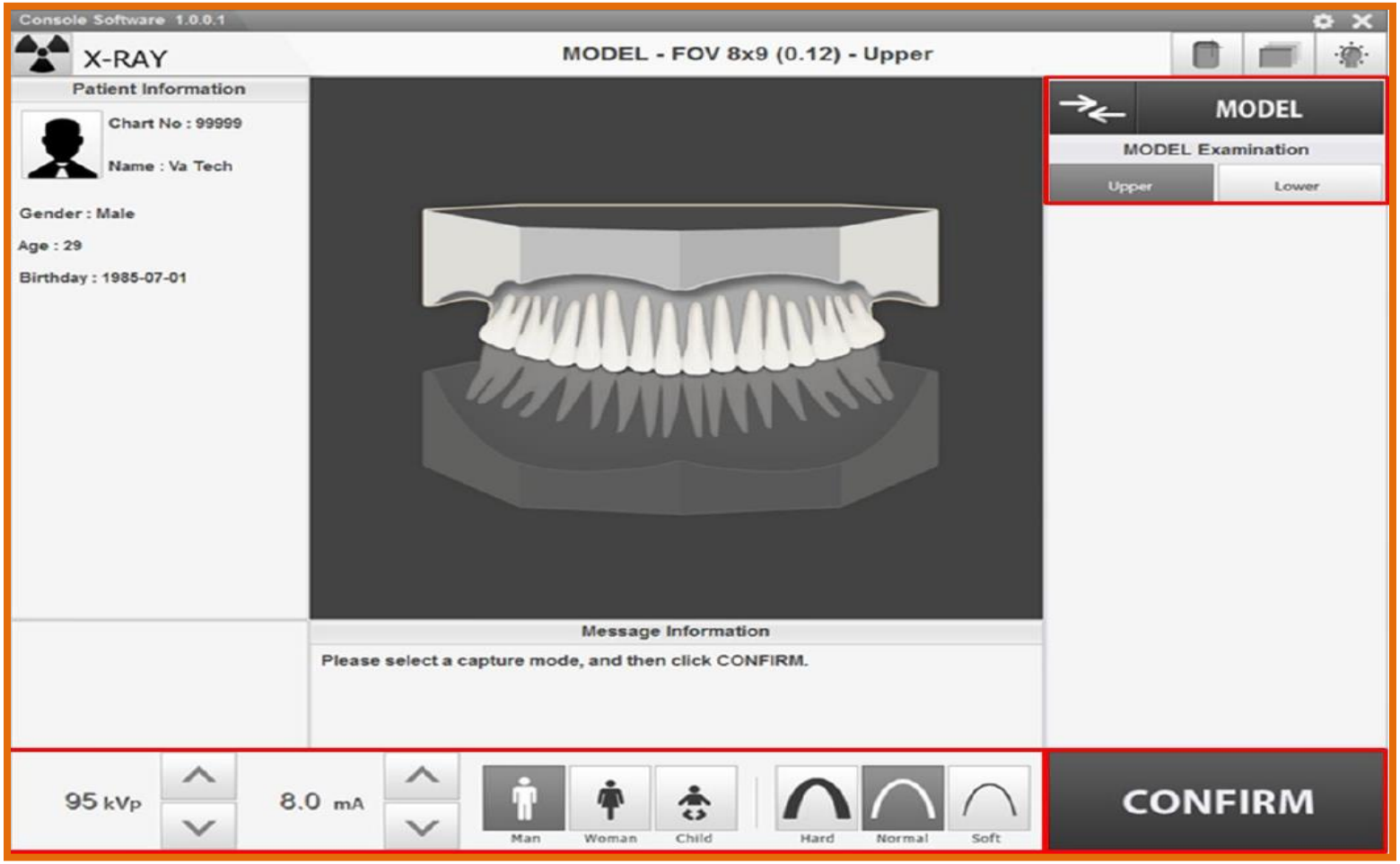
Patient Instructions

1) Swallow and tongue remains at rest in your mouth
2) Bite down on back teeth
3) Breathe through your nose
4) Close your eyes
5) Remain still for 30 seconds

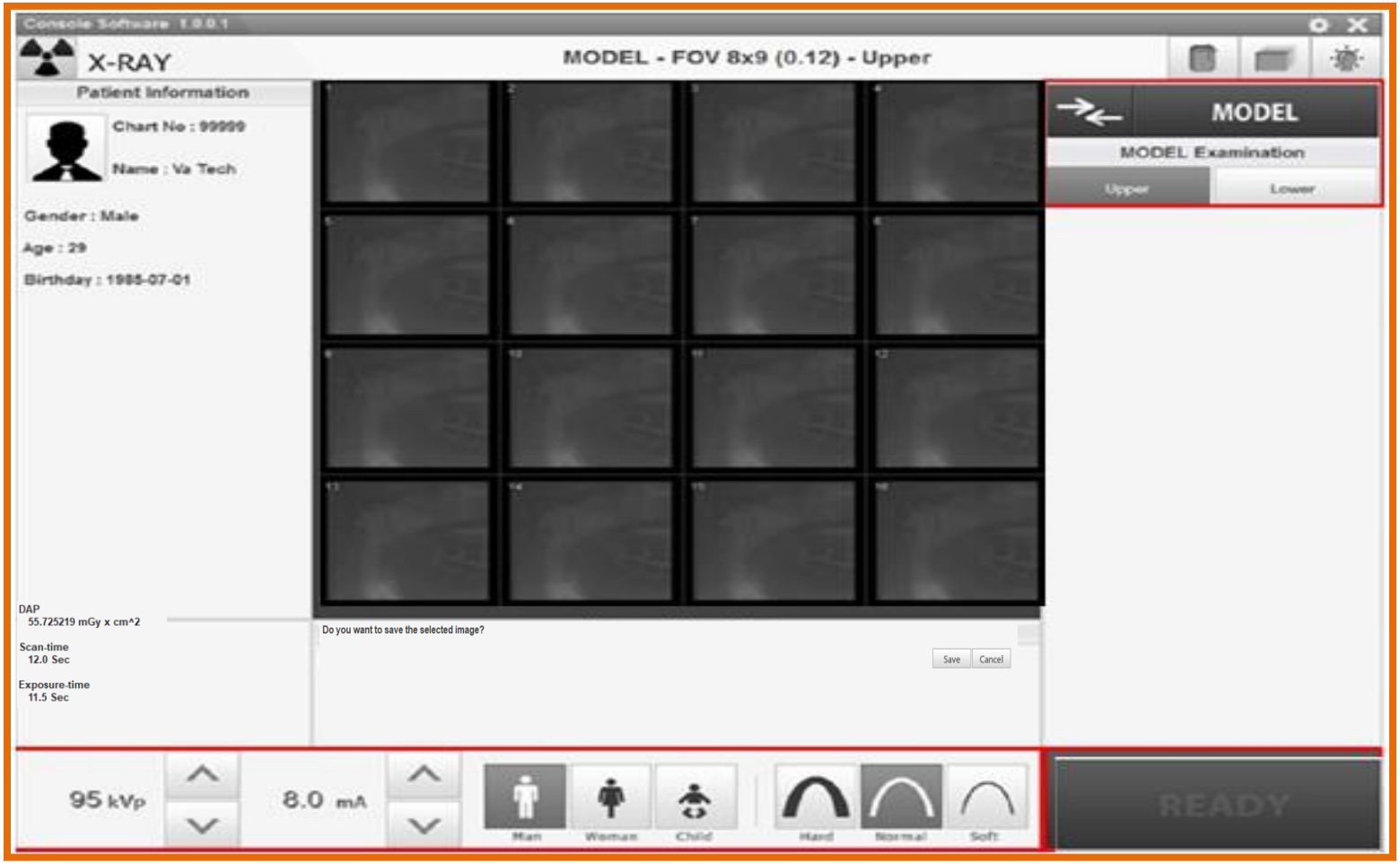
VATECH ASSURANCE

03-II. Stone Model Scanning

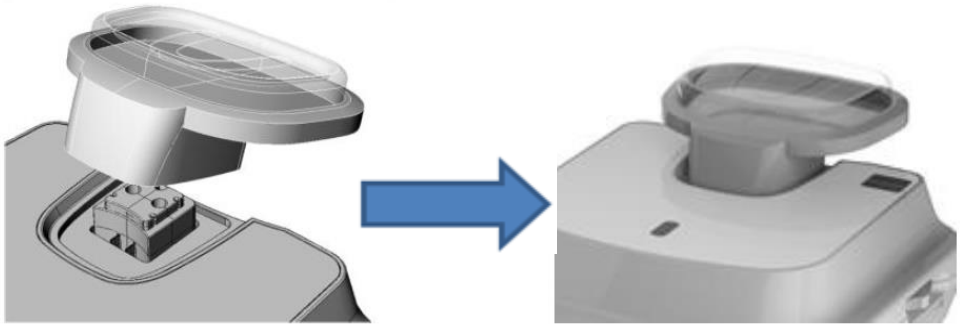
3D Model Capture Software – *Pre-Capture Options:*



3D Model Capture Software – *Pre-Capture Options:*



03-II. Stone Model Scanning

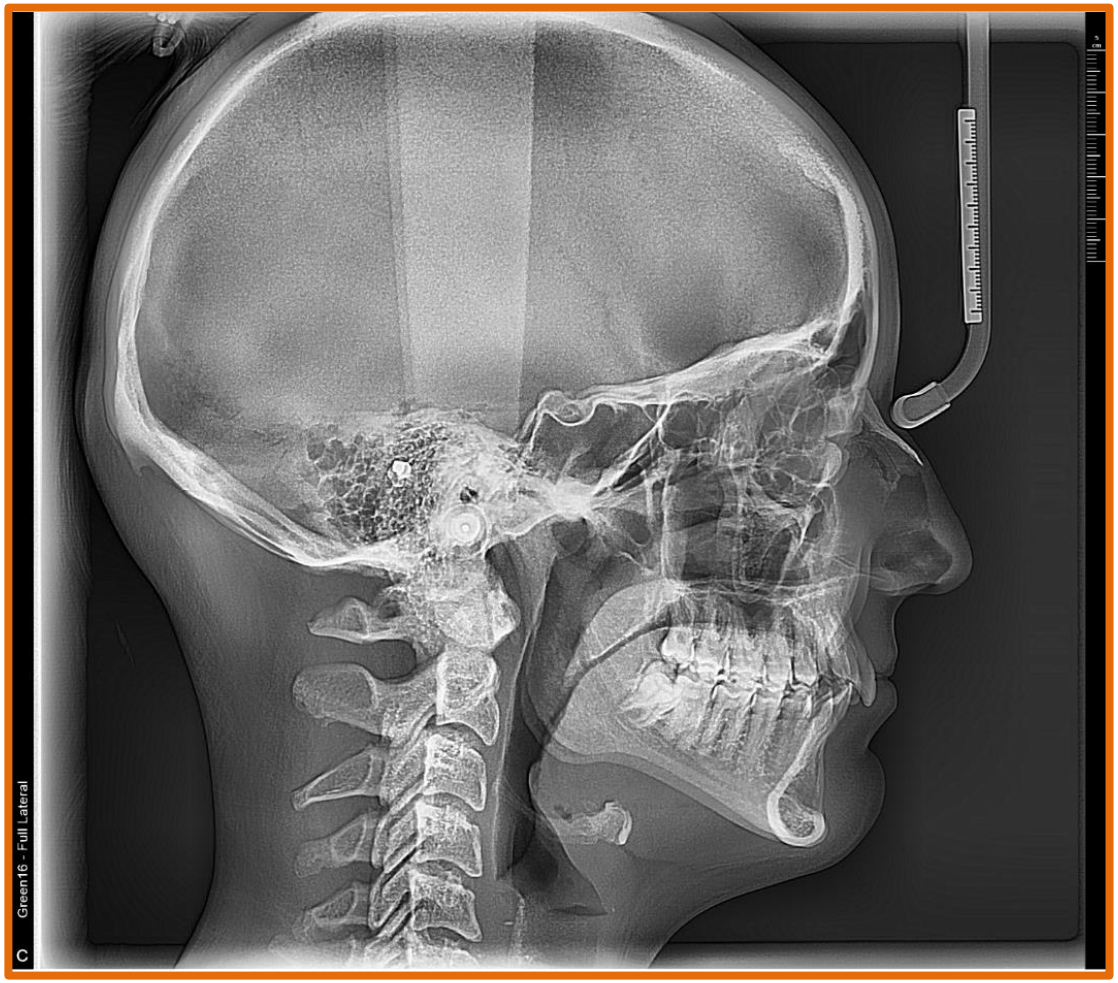


Model Scan Jig Installation

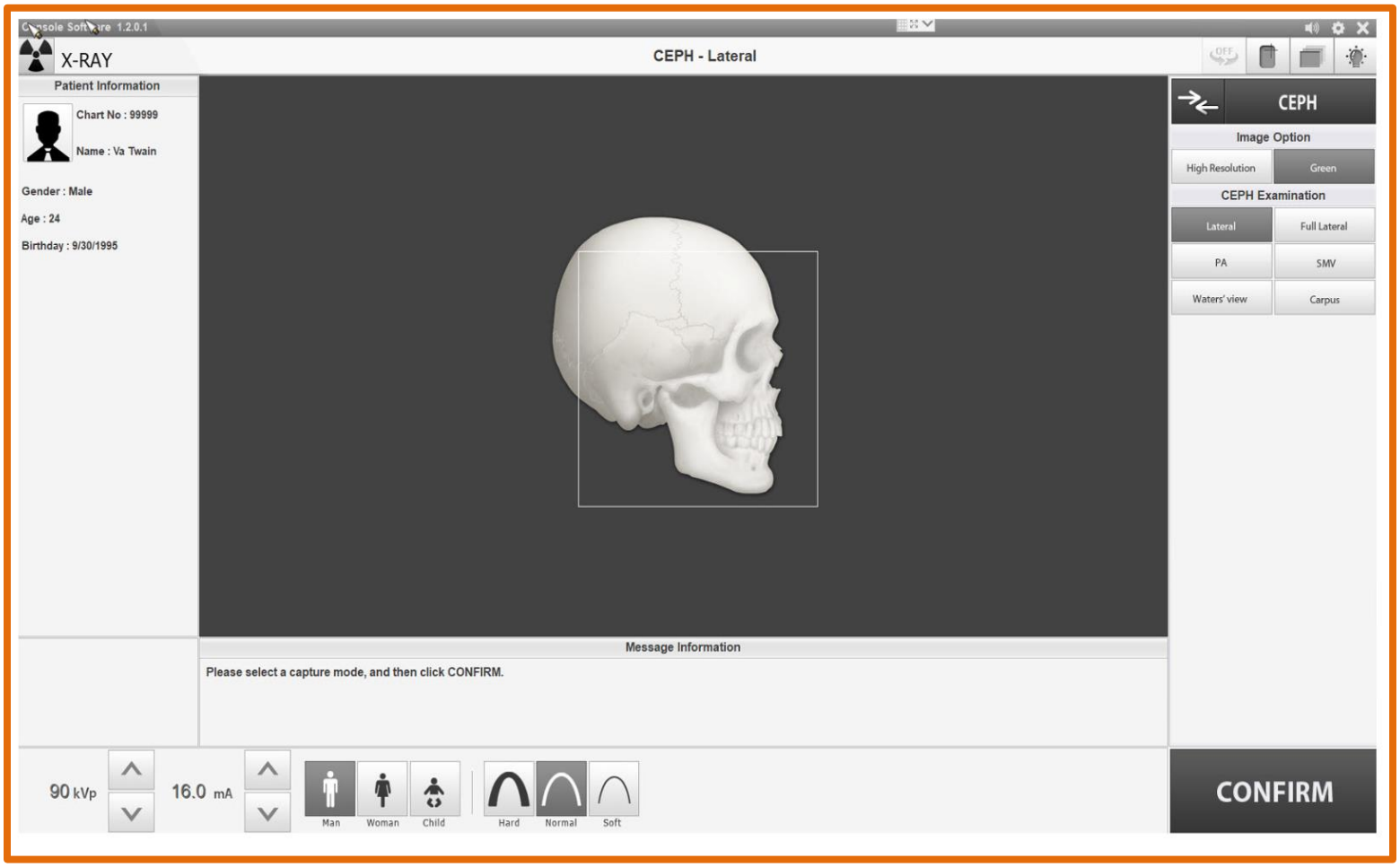
Model Laser Beam Alignment and Placement

03-III. Lateral Ceph Image Capture

2D Ceph Image:

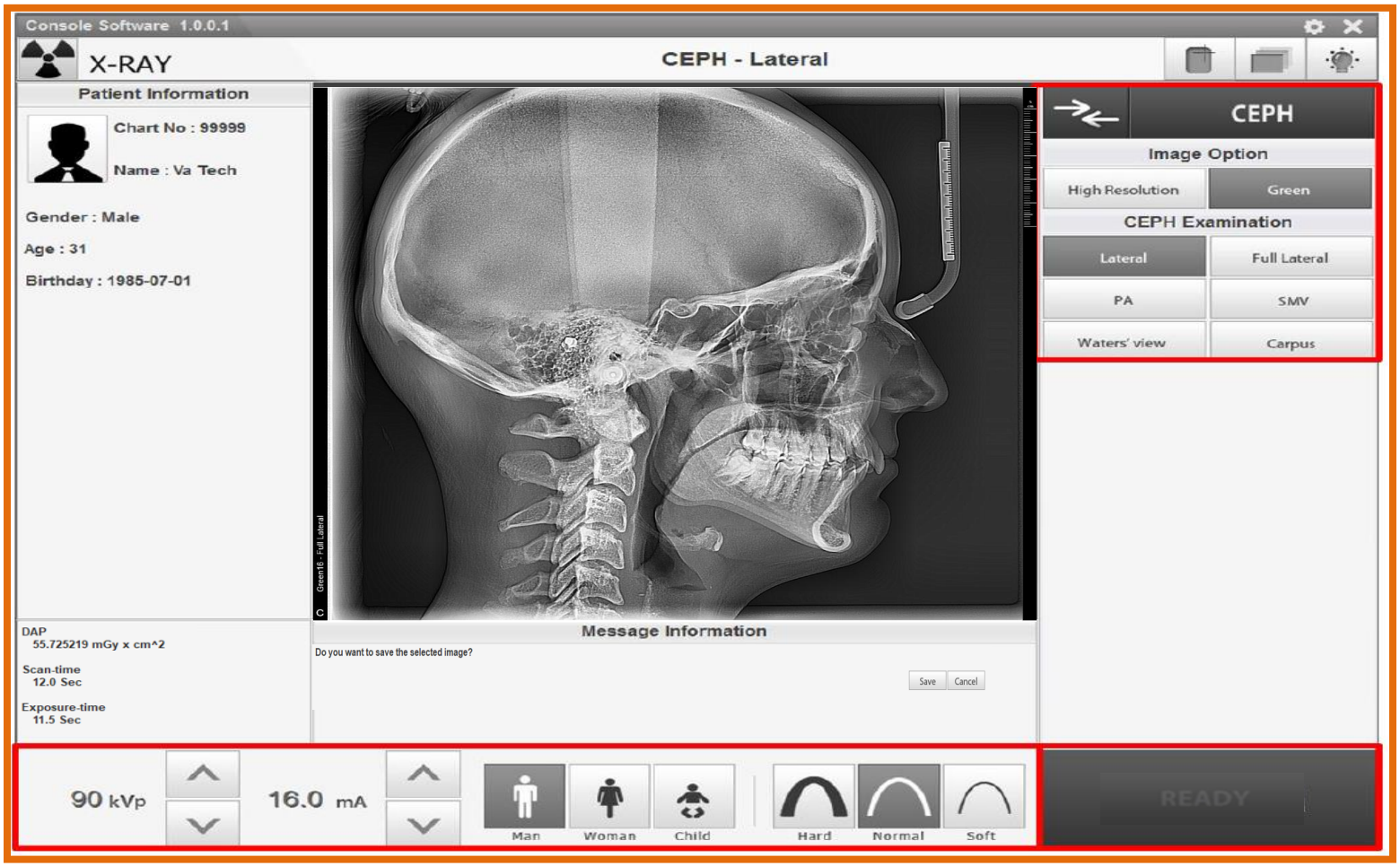


2D Ceph Image Capture Software – *Pre-Capture Options*:

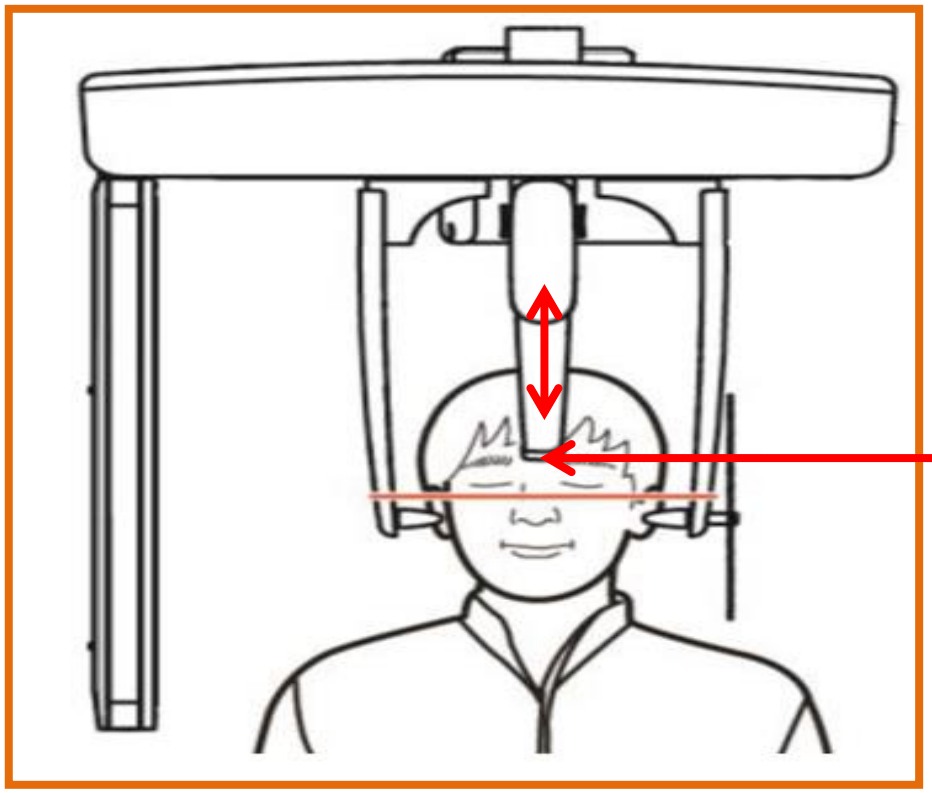


03-III. Lateral Ceph Image Capture

2D Ceph Image Capture Software – *Post Capture Options*:



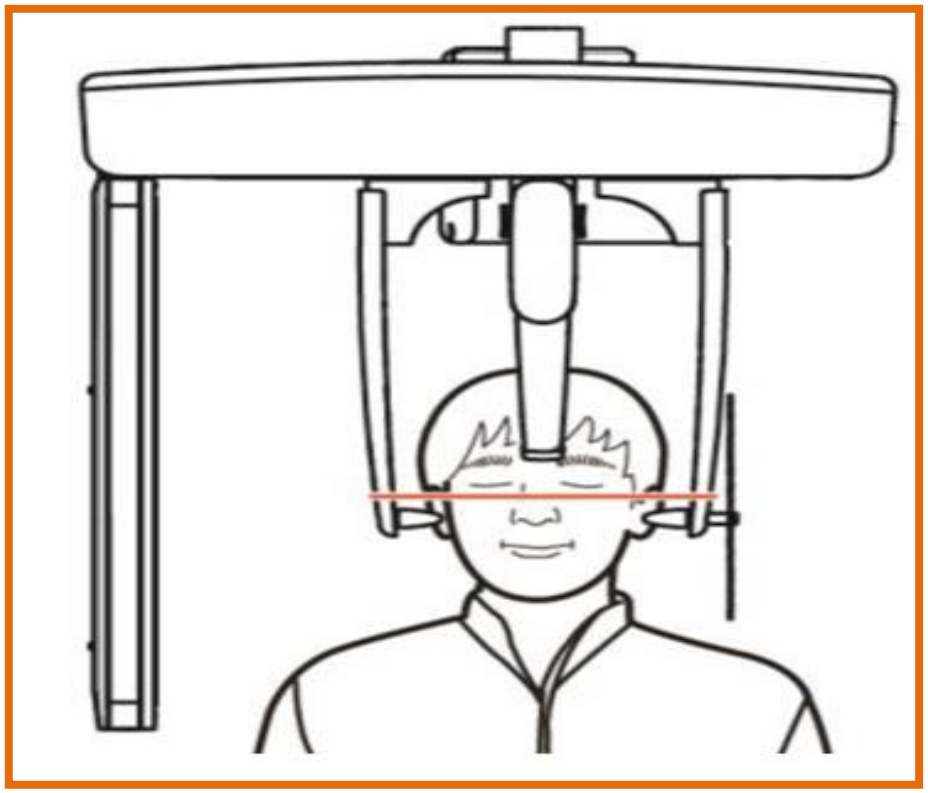
CEPH OBJECTIVE : *"Natural Head Position"*



Ceph Lateral View

- Align Ear Rods so Patient Doesn't Move
- Nasion Bar at Bridge of Nose

CEPH OBJECTIVE : *"Natural Head Position"*



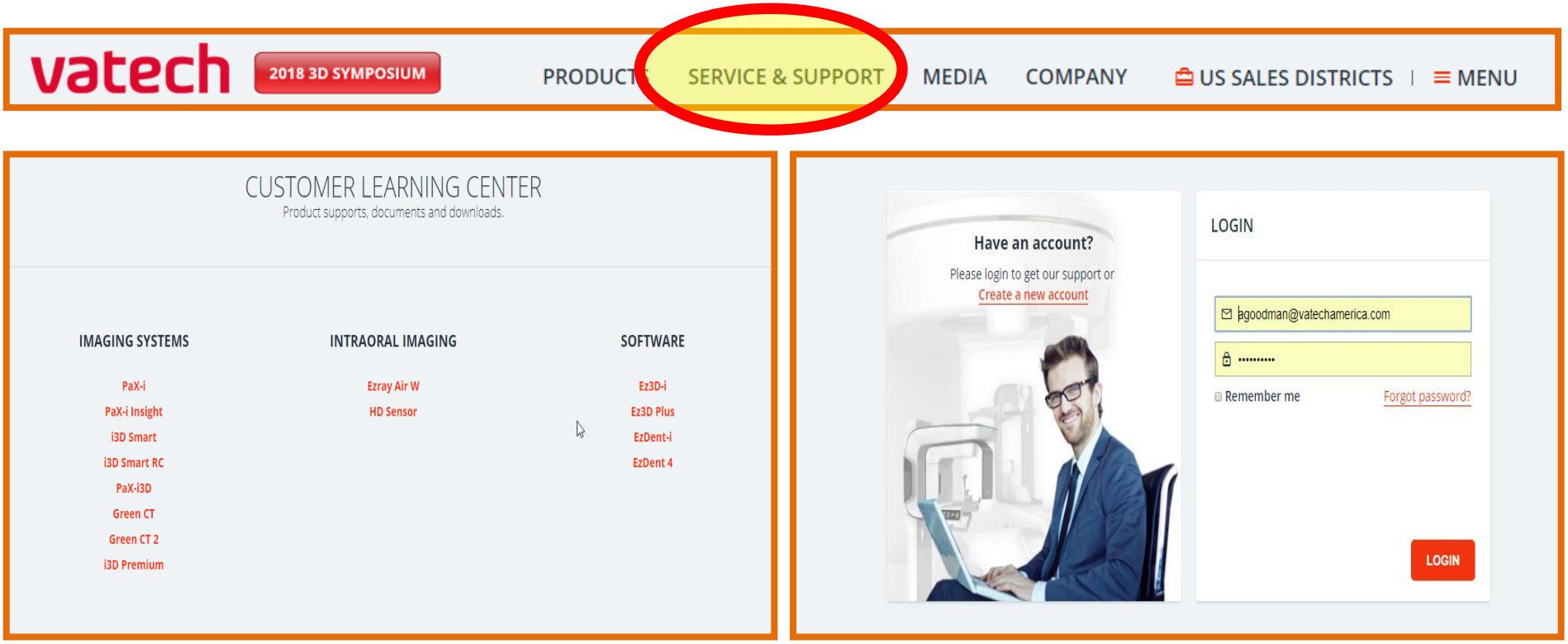
Natural Head Position

- Occlusal plane should be 10 degrees
- Frankfurt plane should be parallel to the floor (Super Tragus to inferior Orbital Rim)

03-IV. Customer Learning Center

Visit our Vatech Customer Learning Portal for Video Tutorials regarding the Imaging Systems and Software

www.vatechamerica.com



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