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<th>Page</th>
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<td>7.7.1</td>
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<td>3D Panel interface (97661579)</td>
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<td>7.8.1</td>
<td>Connector list</td>
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</table>
1. GENERAL WARNINGS

1.1 FOREWORD

The device described in this manual is manufactured by CEFLA s.c. - via Selice Provinciale 23/A - 40026 Imola (BO) Italia, which is the manufacturer, in compliance with the applicable European Directives detailed in the declaration of conformity.

These technical instructions are addressed to the personnel in charge of repair and/or maintenance operations of CEFLA s.c. equipment and contain all the necessary information.

CEFLA s.c. shall be responsible for the safety, reliability and efficiency of the equipment provided that:

• installation, any modifications, settings or repairs are made by authorised technical personnel using CEFLA s.c. original spare parts
• In case of installation in medical locations: the electrical installation of the relevant location complies with IEC 60364-7-710:2002 Standards (Standards on electrical installations of medical locations) or with the equivalent Standards in force in the country of installation
• the equipment is used as outlined in User Manual
• in case of installation of an X-ray unit: The room where the X-ray unit is installed complies with the official Directives on protection from radiation in the country of use

1.2 SAFETY INSTRUCTIONS

All the safety instructions that help prevent any hazardous situations and operate the equipment in a trouble-free manner are given in the user’s manual as explained below:

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Outline of Exclamation Sign]</td>
<td><strong>ATTENTION:</strong> General mandatory action sign</td>
</tr>
<tr>
<td>![Outline of Hand with Glove]</td>
<td><strong>ATTENTION:</strong> Wear protective gloves</td>
</tr>
<tr>
<td>![Outline of Footwear]</td>
<td><strong>ATTENTION:</strong> Wear foot protection</td>
</tr>
<tr>
<td>![Outline of Eyewear]</td>
<td><strong>ATTENTION:</strong> Use protective eyewear</td>
</tr>
<tr>
<td>![Outline of Clothing]</td>
<td><strong>ATTENTION:</strong> Use protective clothings</td>
</tr>
<tr>
<td>![Outline of Grounding Symbol]</td>
<td><strong>ATTENTION:</strong> Connect an earth terminal to the ground</td>
</tr>
</tbody>
</table>
### GENERAL WARNINGS

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>📚 ATTENTION</td>
<td>Refer to instruction manual-booklet</td>
</tr>
<tr>
<td>🌐 ATTENTION</td>
<td>Disconnect mains plug from electrical outlet</td>
</tr>
<tr>
<td>📚 WARNING</td>
<td>See the technical manual</td>
</tr>
<tr>
<td>⚠️ WARNING</td>
<td>Failure to observe instructions may result in equipment damage or injury to the user</td>
</tr>
<tr>
<td>⚡️ WARNING</td>
<td>High voltage</td>
</tr>
<tr>
<td>⚠️ WARNING</td>
<td>Crushing of hands</td>
</tr>
<tr>
<td>⚠️ WARNING</td>
<td>Radioactive material or ionizing radiation</td>
</tr>
<tr>
<td>⚠️ WARNING</td>
<td>Keep clear of moving parts</td>
</tr>
<tr>
<td>⚠️ WARNING</td>
<td>Laser beam</td>
</tr>
<tr>
<td>⚠️ WARNING</td>
<td>Hot surface</td>
</tr>
<tr>
<td>⚠️ WARNING</td>
<td>Biological hazard</td>
</tr>
<tr>
<td>⚠️ WARNING</td>
<td>Sharp objects</td>
</tr>
<tr>
<td>⚠️ WARNING</td>
<td>Corrosive substances</td>
</tr>
</tbody>
</table>
WARNING!

ALWAYS DISCONNECT power supply before performing any maintenance or cleaning operation.

The packed device must be handled using, where possible, suitable mechanical means (forklift, pallet truck, etc.) and following the indications on the package. In case of manual handling, the device must be lifted by several persons using the suitable available means and, if possible, it must be moved with a truck or similar means.

Wear the proper protections
2. PACKAGING AND HANDLING

2.1 HANDLING AND STORAGE

Indications regarding storage, handling and unpacking are given on the outside of the cardboard packaging.

These indications must be strictly observed.

1) The package must be kept upright in the direction indicated by the arrows at all times during handling and storage.

2) Avoid banging the package.

3) Keep the package free from damp.

4) Do not use hooks to handle the package.

5) A nameplate indicates the required ambient conditions for storage:
   a) temperature from -10° to +70° C
   b) relative humidity from 10 to 90%
   c) atmospheric pressure from 500 to 1060 hPa

It is recommended to transport and store the device at a temperature not lower than that indicated on the packing. A prolonged exposure to a low temperature can damage the device.

The packed device must be handled using, where possible, suitable mechanical means (forklift, pallet truck, etc.) and following the indications on the package.

In case of manual handling, it must be lifted by two or more persons using the suitable available means.

2.2 DAMAGE DURING SHIPMENT

When the device is received, check the packing container for any damage suffered.

If the packages are found to be damaged on delivery, accept them with reserve by signing the delivery note and indicating that the “CONTENTS ARE ACCEPTED BUT THEY NEED TO BE CHECKED”.

If the contents are actually damaged, notify the shipping agent and request insurance compensation for damage within five work days. The claim is to be made by the person who commissioned the shipping agent. I.e.:

- if the goods are delivered “carriage forward”, the receiver shall notify the shipping agent
- if the goods are shipped “carriage free” or “free delivered”, the consigner shall notify the shipping agent and file a claim for damages. In this case, CEFLA s.c. shall be informed as soon as possible.

The damaged parts returned to CEFLA s.c. for replacement shall be placed inside the same damaged package. Return to CEFLA s.c. shall be “carriage free” (at the expense of the consigner), while shipment back to the customer shall be at the expense of CEFLA s.c. (carriage free).
3. PREINSTALLATION

Follow instructions described in the INSTALLATION PLAN, available on Extranet.
4. DEVICE INSTALLATION AND CALIBRATION

4.1 ASSEMBLY INSTRUCTIONS

Installation of the device unit must be done by qualified technicians in accordance with the mechanical and electrical assembly instructions defined as follows. Check that the voltage indicated on the system info plate corresponds to that of the electrical system.

REQUIRED INSTRUMENTS

4.1.1 REMOVAL OF PACKAGING
4.1.2 WALL MOUNTING

For further information, see the supplied INSTALLATION DIAGRAM.
4.1.3 FREESTANDING BASE

For further information, see the supplied INSTALLATION DIAGRAM.
4.1.4 WALL-MOUNTED COLUMN

1. 1273mm

2. Not included

3. x6 M8 Not included
   - MAX 30mm

4. x4 M8 Included

5. 20mm
ONLY IF CEPH ARM IS PRESENT

Put the screws in place before fixing the column to the wall (do not tighten)

See “Screw kit”, section “Cinematic group installation”
4.1.4 CINEMATIC GROUP INSTALLATION

Screw kit

<table>
<thead>
<tr>
<th>#</th>
<th>DESCRIPTION</th>
<th>Q.TY</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>SCREW TCEI M8x20 12.9</td>
<td>12 / 14</td>
</tr>
<tr>
<td>B</td>
<td>ELAS GROWER WASHER FOR M8</td>
<td>15 / 17</td>
</tr>
<tr>
<td>C</td>
<td>SCREW TE M8X20 INOX</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>SCREW TCEI M8X30 8.8</td>
<td>5</td>
</tr>
<tr>
<td>E</td>
<td>SCREW TPSEI M6X16 10.9</td>
<td>4</td>
</tr>
<tr>
<td>F</td>
<td>SCREW TCEI M5X16 8.8</td>
<td>2</td>
</tr>
<tr>
<td>G</td>
<td>WASHER 8.4X17 S 1.6 R40</td>
<td>2</td>
</tr>
</tbody>
</table>
3. Assembly instructions:

- Place the components according to the diagram.
- Ensure all parts are secured with the correct screws and washers.

4. Specifications:

- 20mm clearance from the edge.

5. Final check:

- Confirm all connections are tight and secure.
- Verify the alignment and functionality of the assembly.
SAFETY SCREWS REMOVAL

A

B
ONLY WITHOUT CEPH ARM
Connect:
LAN (sensor)
LAN (logic)

Power board
(see point 11 "Electrical connections on power board")
Electrical connections on POWER board

- **K1** - COLUMN MOTOR POWER SUPPLY
- **K2** - COLUMN MOTOR THERMAL SENSOR
- **K13/K22** - COLUMN UPPER ENDPOINT PHOTOCELL / COLUMN ANTI-PINCH SWITCH
- **K18** - COLUMN LOWER ENDPOINT PHOTOCELL
- **K10** - X-RAY BUTTON (1 = VCC, 2 = BUTTON, 3 = READY LED, 4 = X-RAY LED, 5/6 = NOT USED)
- **K14** - EXTERNAL SIGNAL LAMPS - 1,2 = READY - 3,4 = X-RAY EMISSION
- **K11** - DOOR INTERLOCK
- **K12** - EXTERNAL EMERGENCY BUTTON
- **K17** - MAINS POWER SUPPLY

COMPULSORY

OPTIONAL
**X-Ray button**

For further information, see the supplied INSTALLATION DIAGRAM.

<table>
<thead>
<tr>
<th>CONNECTOR</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>RED</td>
<td>VCC</td>
</tr>
<tr>
<td>BROWN</td>
<td>X-RAY Emission</td>
</tr>
<tr>
<td>WHITE</td>
<td>Green “Ready” LED</td>
</tr>
<tr>
<td>BLUE</td>
<td>Orange “X-Ray” LED</td>
</tr>
</tbody>
</table>
4.1.6 CEPH ARM INSTALLATION (IF PRESENT)
4

B

x3

D

x3

5

6

EN

DEVICE INSTALLATION AND CALIBRATION » Assembly instructions
Logic board (see point 8 "Electrical connections on logic board")
Electrical connections on LOGIC board

- **K36** CEPH SYNCHRONIZATION SIGNAL
- **K43/K44** CEPH KEYBOARD
- **K22** CEPH LIMIT SWITCH
- **K20** CEPH MOTOR
### 4.1.7 CHECK DURING THE ASSEMBLING

<table>
<thead>
<tr>
<th>PREINSTALLATION CHECK</th>
<th>RESULT OK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intact external package</td>
<td></td>
</tr>
<tr>
<td>Check compliance of delivery documents</td>
<td></td>
</tr>
<tr>
<td>Check ID label/package labels match</td>
<td></td>
</tr>
<tr>
<td>Check place of installation and supplies*</td>
<td></td>
</tr>
</tbody>
</table>

**POWER SUPPLY CHECK**

| Connection of power and earth leads                          |           |
| Power supply voltage                                         |           |
| Operation of main switch                                     |           |
| Check presence of power mains protection                     |           |

**ANTI-ENTRAPMENT SAFETY DEVICE CHECKS**

| Anti-entrapment safety microswitch*                          |           |

**MECHANICAL CHECKS**

| Balance of pantograph arm*                                   |           |
| Proper attachment and good condition of dental unit casing   |           |

**DEVICE CHECK AND CALIBRATION**

| Software installation and configuration                      |           |
| Control panel functions                                      |           |
| Collimator setting                                           |           |

**INSTRUMENT CHECK AND CALIBRATION**

| Curing lamp check*                                           |           |
| Camera functions and image quality check*                    |           |

**MULTIMEDIA**

| Power on and monitor functions*                              |           |
| Installation carried out in accordance with local law        |           |
| Check presence of Quick Guide                                |           |

*if applicable

### 4.1.8 CHECKING AFTER MECHANICAL INSTALLATION

After mechanical installation, ensure to check the following points:

1) that the column has no clearance/end float relative to the fastening system used (stand or wall-mount) or relative to the metal base installed on the column. If this is not true, contact the manufacturer.

2) that the cephalometry arm (if any) is assembled with the 2 support pins and that the retaining screws are duly tightened; make sure there is no clearance or end float.
4.2 COVER INSTALLATION

Screw kit

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>SCREW TCEI M5X10 8.8</td>
</tr>
<tr>
<td>B</td>
<td>ELAS GROWER WASHER FOR M8</td>
</tr>
<tr>
<td>C</td>
<td>SCREW TCEI M8X20 8.8</td>
</tr>
<tr>
<td>D</td>
<td>SCREW TCEI M4X6 8.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>SCREW T/BOMB EI M4X10 10.9</td>
</tr>
<tr>
<td>F</td>
<td>SCREW TCEI M5X16 8.8</td>
</tr>
<tr>
<td>G</td>
<td>ELAS GROWER WASHER X M5</td>
</tr>
</tbody>
</table>

Connect K1 ▶ Logic board
(see section “Circuit boards”)
DEVICE INSTALLATION AND CALIBRATION » Cover installation
DEVICE INSTALLATION AND CALIBRATION » Cover installation
Device Installation and Calibration - Cover Installation

1. Click!

2. Connect:
   - K1 / K11 ➤ Logic board
   - K12 ➤ Ear guides potentiometer
   - K13 ➤ Nasion potentiometer
   - K14 ➤ Cephalostat drum sensors

   (see section "Circuit boards")

3. Click!

4.
DEVICE INSTALLATION AND CALIBRATION » Cover installation
DEVICE INSTALLATION AND CALIBRATION » Cover installation
4.3 COVERS REMOVAL

[Diagram showing steps for covers removal]
4.4 OPERATING SYSTEM CONFIGURATION

4.4.1 SYSTEM REQUIREMENTS

The device works with 2 Ethernet connections, one for generic communication with the PC (that can be connected to a local area network) and another one (which must absolutely be point-to-point) dedicated to image acquisition from the 3D panel, therefore connecting the device to the INTEL GIGABIT network card of the computer. The computer dedicated to image acquisition must have MANDATORY requirements. Refer to the user manual of the Imaging software for the minimum requirements of the pc clients not directly connected to the machine.

4.4.2 PRELIMINARY OPERATIONS

The PC supplied by Cefla is complete with hardware and software for the device operation. If another PC is chosen, it must comply with the specific requirements and the software must be installed on it autonomously. The 2 PC network cards manage, respectively, the communication between device and PC and the connection between sensors and PC. The latter is carried out by means of a dedicated network card (INTEL GIGABIT) that must be compulsorily used and needs a free PCI-E slot on the PC motherboard. The operating system of the PC is compulsorily WINDOWS 10 PRO 64 bit. Once installed, make sure that all the peripheral drivers are properly recognised. The INTEL GIGABIT is automatically detected by the operating system and installed with the corresponding drivers. The PC connected to the device needs an account with the administrator rights.

WARNING: for the video card drivers, use the pack available on the Extranet.

4.4.3 OPERATING SYSTEM SETTINGS

![Image of Control Panel with 'User Accounts' highlighted]
DEVICE INSTALLATION AND CALIBRATION » Operating system configuration

Choose when to be notified about changes to your computer

User Account Control helps prevent potentially harmful programs from making changes to your computer.
Tell me more about User Account Control settings

Always notify

Never notify

Not recommended.

OK Cancel
4.4.3.1  POWER MANAGEMENT SETTINGS

1. Power Options

2. High performance
   - Favours performance but may use more energy.

3. Change plan settings
Disabling “Fast start-up”

Define power buttons and turn on password protection

Change settings that are currently unavailable

3. **Turn on fast start-up (recommended)**
   - This helps start your PC faster after shut-down. Restart isn’t affected. [Learn More](#)
Define power buttons and turn on password protection

Choose the power settings that you want for your computer. The changes that you make to the settings on this page apply to all of your power plans.

Power and sleep button settings

- When I press the power button: Shut down
- When I press the sleep button: Sleep

Shutdown settings

☐ Turn on fast start-up (recommended)
   This helps start your PC faster after shut-down. Restart isn’t affected. Learn More

☐ Sleep
   Show in Power menu.

☐ Hibernate
   Show in Power menu.

☑ Lock
   Show in account picture menu.

4.4.3.2 OPERATING SYSTEM OPTIMIZATION SETTINGS

1. Choose which apps can run in the background

2. System settings

- Background settings
  - Change the picture on your lock screen
  - Remove Windows background images
  - Choose background, slideshow or solid colour as your background mode
  - Choose Windows Spotlight, picture or slideshow as your lock screen background
Device Installation and Calibration

Operating system configuration

1. View advanced system settings
2. Advanced Windows Update options
3. Background apps

Choose which apps can run in the background.
Device Installation and Calibration » Operating System Configuration

3. System Properties

4. Performance Options

5. Adjust for best performance

Select the settings that you want to use for the appearance and performance of Windows on this computer.

- Let Windows choose what’s best for my computer
- Adjust for best appearance
- Custom:

- Animate controls and elements inside windows
- Animate windows when minimizing and maximizing
- Animations in the taskbar
- Enable Peek
- Fade or slide menus into view
- Fade or slide ToolTips into view
- Fade out menu items after clicking
- Save taskbar thumbnail previews
- Show shadows under mouse pointer
- Show shadows under windows
- Show thumbnails instead of icons
- Show translucent selection rectangle
- Show window contents while dragging
- Slide open combo boxes
- Smooth edges of screen fonts
- Smooth-scroll list boxes
- Use drop shadows for icon labels on the desktop
4.4.3.3 DISABLING “WINDOWS AUTO-UPDATE SERVICE”
Device Installation and Calibration » Operating System Configuration
4.4.3.4 DISABLING WINDOWS UPDATE SHARING OVER THE NETWORK (LOW DATA TRAFFIC)

Choose how updates are delivered

Updates from more than one place

Download Windows updates and apps from other PCs in addition to Microsoft. This can help speed up app and update downloads.

Do you have a question?
Get help

Get updates from Microsoft and get updates from and send updates to

- PCs on my local network
- PCs on my local network and PCs on the Internet

When this is turned on, your PC may also send parts of previously downloaded Windows updates and apps to PCs on your local network or PCs on the Internet, depending on what's selected below.

Off

Choose how updates are delivered

Note: Windows Update might update itself automatically first when checking for other updates.
4.4.3.5 FIREWALL SETTINGS, PRIVACY AND SECURITY

4.4.3.6 “WINDOWS DEFENDER” SETTINGS
Windows Defender

Windows Defender Antivirus protects your computer against viruses, spyware and other malicious software. Open Windows Defender Security Centre to use it.

Version info

- Anti-malware client version: 4.18.1806.18062
- Engine version: 1.1.15100.1
- Anti-virus definition: 1.273.422.0
- Anti-spyware definition: 1.273.422.0
- Network inspection system engine version: 1.1.15100.1
- Network inspection system definition version: 1.273.422.0

Keep your PC safe

Windows Defender Security Center has options to help keep you protected online, maintain your device’s health, run periodic scans, manage your threat-protection settings, and more.

Get more info about Windows Defender Security Center

Virus & threat protection

View threat history, scan for viruses and other threats, specify protection settings, and get protection updates.

Scan history

- Last scan: 27/07/2018 (quick scan)
- 0 threats found
- 37720 files scanned

Virus & threat protection settings

No action needed.

Protection updates

Protection definitions are up to date.
- Last update: 27 July 2018 08:02
Real-time protection
Locates and stops malware from installing or running on your device. You can turn off this setting for a short time before it turns back on automatically.

On

Cloud-delivered protection
Provides increased and faster protection with access to the latest Windows Defender Antivirus protection data in the cloud. Works best with automatic sample submission turned on.

Cloud-delivered protection is off. Your device may be vulnerable.

Off

Privacy statement

Automatic sample submission
Send sample files to Microsoft to help protect you and others from potential threats. We'll prompt you if the file that we need is likely to contain personal information.

Automatic sample submission is off. Your device may be vulnerable.

Off

Privacy statement
Submit a sample manually

Exclusions
Windows Defender Antivirus won’t scan items that you’ve excluded. Excluded items could contain threats that make your device vulnerable.

Add or remove exclusions

Notifications
Windows Defender Antivirus will send notifications with critical information about the health and security of your device. You can specify which non-critical notifications you would like to receive.

Change notification settings
AFTER SOFTWARE INSTALLATION
(see paragraphs “Acquisition Server Plus software installation”, “iRYS software installation and configuration”)

4.4.3.7 DEVICE INSTALLATION SETTINGS

![Image of Windows Defender Security Centre]

Exclusions
Add or remove items that you want to exclude from Windows Defender Anti-virus scans.

Add an exclusion

NNT Folder
iCapture Folder
Acquisition Server Plus Folder

10

11

1 Devices and Printers

![Image of Device installation settings]

Adjust your computer’s settings

Administrative Tools
BitLocker Drive Encryption
Date and Time
File History
HomeGroup
Internet Options
Mouse

AutoPlay
Colour Management
Default Programs
Ease of Access Centre
Flash Player (32-bit)
Indexing Options
Keyboard
Network and Sharing Centre

Back up and Restore (Windows 7)
Credential Manager
Device Manager
File Explorer Options
Fonts
Infrared
Language
Phone and Modem
Device installation settings

Do you want to automatically download manufacturers' apps and custom icons that are available for your devices?

- [ ] Yes (recommended)
- [x] No (your device might not work as expected)

5. Save Changes
DEVICE INSTALLATION AND CALIBRATION » Operating system configuration
Do not include drivers with Windows Updates

- Enabled

Disabled

Supported on:
- At least Windows Server or Windows 10

Options:
- Help:

Enable this policy to not include drivers with Windows updates.

If you disable or do not configure this policy, Windows Update will include updates that have a Driver classification.

[Diagram showing settings and options for Windows Update]
4.4.4 PC-DEVICE CONNECTION

The device may be connected to a local area network or directly to the main workstation. In both cases, the Ethernet connection for sensors must be point-to-point and is always managed autonomously by the software and the machine.

Therefore, at this point of the installation, it is not necessary to set any IP address on the INTEL GIGABIT board, as it will be set autonomously during the software installation procedure described in the following chapters.

The network card dedicated to the communication with the device must be configured as follows:

4.4.4.1 CASE1-DEVICE-PCDIRECTCONNECTION(SETTINGASTATICIPADDRESSON THE NETWORK CARD)

It is necessary to set a static IP address for the network card dedicated to PC - device communication and it must be compatible with the device’s default address (192.168.1.160).
3. Click on the "LAN" option and then select "Properties".

5. Ensure the "Internet Protocol Version 4 (TCP/IPv4)" is selected and click on "Properties".

6. This will open the IPv4 Properties window where you can configure your IP settings.
4.4.4.2 CASE2-DEVICE-PC CONNECTION OVER THE NETWORK (SETTING A DYNAMIC IP ADDRESS ON THE NETWORK CARD)

It is necessary to set a dynamic IP address for the network card dedicated to PC – device communication.

1. Open ncpa.cpl
2. Set a dynamic IP address

160 (IP Device) 
161 (IP Console)
EN

DEVICE INSTALLATION AND CALIBRATION » Operating system configuration
4.4.5 “INTEL GIGABIT” NETWORK CARD CONFIGURATION
DEVICE INSTALLATION AND CALIBRATION » Operating system configuration

[Image of Sensor Properties window]

1. Connect using:
   - Intel(R) Gigabit CT Desktop Adapter

2. Description:
   - Allows this PC to be discovered and located on the network.

[Image of Intel(R) Gigabit CT Desktop Adapter Properties window]

3. Advanced

4. IPV4 Checksum Offload
   - Value: 9014 Bytes
WARNING: maybe the “Receive Buffers” item is not displayed directly in this window. If it is not displayed, search for the “Performance Options” item and click on “Properties”. The “Receive Buffers” value is displayed there.

WARNING: maybe the “Interrupt Moderation” item is not displayed directly in this window. If it is not displayed, search for the “Performance Options” item and click on “Properties”. The “Interrupt Moderation” value is displayed there.
WARNING: maybe the “Interrupt Moderation Rate” item is not displayed directly in this window. If it is not displayed, search for the “Performance Options” item and click on “Properties”. The “Interrupt Moderation Rate” value is displayed there.
### DEVICE INSTALLATION AND CALIBRATION » Operating system configuration

1. **Network Connections**
   - Click on "Network Connections" to view network settings.

2. **SENSOR Properties**
   - Click on the "Properties" button for the network connection to configure settings.

3. **Networking**
   - Configure the networking settings as needed.

4. **Connect using**
   - Select the appropriate network adapter, such as "Intel(R) Gigabit CT Desktop Adapter".

5. **This connection uses the following items**
   - Configure the required networking components, such as "Internet Protocol Version 4 (TCP/IPv4)".

6. **Install...**
   - Install any necessary components.

7. **Uninstall**
   - Uninstall any unnecessary components.

8. **Description**
   - Configure the network description to allow the PC to be discovered and located on the network.

9. **OK**
   - Save changes and close the configuration dialog.
Avoid using 192.168.2.xxx subnet for other network adapters in the PC.
4.5 SOFTWARE INSTALLATION

4.5.1 “ACQUISITION SERVER PLUS” SOFTWARE INSTALLATION

1. Click "Acquisition Server Plus" x2

2. Select Setup Language
   - Choose "English"
   - Click "OK"

3. Accept the agreement
   - Click "Next >"

4. Install the software
   - Acquisition Server Plus

5. Proceed with installation
Confirm as requested by the installer to complete the installation.

⚠️ **WARNING:** Drivers for communication with 2D sensors will be installed during this installation.
4.5.2 "ACQUISITION SERVER PLUS" CONFIGURATION

USER MODE:
SERVICE MODE:

1. Select server mode:
   - Factory mode
   - Service mode
   - User mode
   - Superuser mode

2. Enter password:
   - Password for SERVICE mode: cefla

3. Change Mode
4. Yes

DEVICE INSTALLATION AND CALIBRATION » PC configuration

EN
4.5.2.1 DEVICE SEARCH AND CONNECTION

10 Find Device  Connect Device  Device Options  Name

11 Select a device

12 OK  Cancel

13 Find Device  Connect Device

14

15 Close
**NOTE:** should it be necessary to change the device IP address for any need, it is possible to change it from the menu “Settings -> Device Options”

A fixed IP can be set in this window in the field “Fall back Ip address”. Removing the tick from “DHCP” will make it impossible for the device to obtain a dynamic address by a router. Click on “OK”. The IP change becomes effective when the device is restarted.

It is necessary to repeat the device search and connection procedure.
4.5.2.2 SENSOR SEARCH AND CONNECTION

![Image of Acquisition Server Plus UI]

- **Find Device**
- **Connect Device**
- **Device Options**
  - **Sensor**
  - **Device Type**

**Connection status**: PA14 - 172.20.32.75

**Device**
- No sensor selected
- Sensor autoconnect will be deactivated
- Configure a sensor before reactivate autoconnection

**Result**:
- **Select sensor**
  - SN: 23857690
  - Vendor: Hamamatsu
  - Model: C10900D-70
  - PanType: v3.35

**Options**:
- **OK**
- **Cancel**
4.5.3 DRIVER INSTALLATION CHECKS

1. Click on the LAN connection.
2. Open the Properties.
3. Ensure the GigE Vision Filter Driver is not selected.
4. Click OK.
**WARNING:** perform the procedures (1 -> 4) for all the network cards that may be present on the PC, except for the one dedicated to the communication with sensors (INTEL GIGABIT).

If item (7) is missing, this indicates that the driver installation was not successful and it must be repeated. Missing item 7: see chapter "Acquisition Server Plus software installation"
4.5.4 Irys Software Installation and Configuration

The software used to manage the images downloaded from the device is iRYS, installed in the version MAIN WORKSTATION in case of 3D device, or in the version iRYS Station in case of 2D device only.
Select the software you need to install.

- **iRYYS Station**
- hyperion X9 3D Full main workstation
- hyperion X5 3D main workstation
- hyperion X9 pro main workstation
- hyperion X5 3D ceph/ceph ready main workstation

Description:
Workstation connected to a hyperion X5 3D ceph/ceph ready device

Select installation mode:

- **Stand-alone (Recommended)**
  This is the standard installation mode.
  It applies to both single and multiple users (in a network domain).

- For partnering software
  The application will be driven by a certified third-party software.
  For more information, contact your local distributor.
Confirm as requested by the installer to complete the installation.

**Installation complete**

IFS was successfully installed

Remove any disks from their drives, and then click **REBOOT** to complete setup.
Enter Service Mode:

**METHOD 1**

![Keyboard Image]

**SERVICE LEVEL**
METHOD 2

10a Tools View Help
Start error log viewer...
Send log file via e-mail...
Configure automatic dispatch of log files ...
Scanner tests

10b Insert password
Create new image template...
Select image template...

10c

306090

Ok

11

12345

Ok
Device Installation and Calibration » PC configuration

Select a device:

1. IP = 172.20.34.38
   MAC = 08:00:39:30:77:62
   Name =

Find

Remove

Add new

Scanner 2D type:
- Hyperion MRT/X7
- Hyperion X9
- Hyperion X5
- Hyperion X5 (Ceph/Ceph ready)
- Hyperion X9 pro
- MainWS (Ceph/Ceph ready)
- MainWS (Ceph/Ceph ready)
- MainWS (CB3D)
- MainWS (CB3D)

Auto-import 2D images:
- Yes
- No

IP address:

Machine Name

Use DHCP

Save

Exit

OK

Cancel
**Device Installation and Calibration** » PC configuration

**Devices Configuration**

- **Configurations:**
  - Configuration 1

- **Selected Configuration Properties:**
  - **Name:** Configuration 1
  - **Scanner 2D type:**
    - Hyperion MRT/X7
    - Hyperion X9
    - Hyperion X5 (Selected)
    - Hyperion X5 pro
  - **Auto-import 2D images:**
    - Yes
  - **IP address:**
    - 172.20.32.48
  - **Use DHCP:**
  - **Machine Name:** 700E0008

**Actions:**

- **Add new**
- **Remove**
- **Find**
- **Save**
- **Exit**

**Status:**

- **Device Connected**

**Virtual Keyboard**

- **Virtual Keyboard**
- **About...**
Under normal operating conditions, the lower box may be grey: this does NOT indicate a connection problem since PAN/CEPH sensors are usually off. They are on only when they are being used.
<table>
<thead>
<tr>
<th>Hostname</th>
<th>Username</th>
<th>Authorized</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC</td>
<td>cefia</td>
<td></td>
</tr>
</tbody>
</table>
4.6 2D CALIBRATION

REQUIRED INSTRUMENTS

Calibration kit, including:

- Support plate
- Dentition phantom
- Aluminium filter
- Laser reference sheet
- Allen wrench set
- Screwdriver set
- Pliers

4.6.1 TUBE HEAD WARM-UP

PERFORM THIS OPERATION ONLY IF THE DEVICE REMAINS UNUSED FOR MORE THAN THREE MONTHS
2D calibration

User Shot

Shot Parameters

kV: 50
mA: 4
Time exposure (ms): 1000

Setup axes position

Save Image

SHOT

STOP

Exit
### Shot Parameters

<table>
<thead>
<tr>
<th>kV</th>
<th>mA</th>
<th>Time (ms)</th>
<th>Repetitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>4</td>
<td>1000</td>
<td>2</td>
</tr>
<tr>
<td>70</td>
<td>4</td>
<td>1000</td>
<td>2</td>
</tr>
<tr>
<td>80</td>
<td>4</td>
<td>1000</td>
<td>2</td>
</tr>
<tr>
<td>85</td>
<td>4</td>
<td>1000</td>
<td>2</td>
</tr>
<tr>
<td>85</td>
<td>8</td>
<td>1000</td>
<td>2</td>
</tr>
<tr>
<td>85</td>
<td>12</td>
<td>1000</td>
<td>2</td>
</tr>
<tr>
<td>85</td>
<td>12</td>
<td>5000</td>
<td>1</td>
</tr>
<tr>
<td>68</td>
<td>15</td>
<td>5000</td>
<td>1</td>
</tr>
</tbody>
</table>
4.6.2 PRELIMINARY ACTIONS

1. Settings

2. Change Mode
Attention!
The application will be restarted to select new mode.
Are you sure you want to continue?

3  Yes  No

4  Service mode

5  OK  Cancel

6  Password for SERVICE mode  cefla

7  OK

8

Acquisition Server Plus 6.3.0.21

Connection status 70880042 - 192.168.1.13

Device

Sensor disconnected
4.6.3 MACHINE CONFIGURATION

Calibration Steps
- Advanced
- Machine Configuration

Calibration step
- PAN Verifying X-Ray Alignment
- PAN Verifying Sensor Compliance
- PAN Verifying Sensor Calibration
- PAN Verifying Mechanical Centering
- Laser Calibration
- CEPH Verifying X-Ray Alignment
- CEPH Verifying Sensor Compliance
- CEPH Verifying Sensor Calibration
- CEPH Verifying Mechanical Centering
- Headrest Calibration
- Nasion Calibration

Status
- PAN Verifying X-Ray Alignment: ✓
- PAN Verifying Sensor Compliance: X
- PAN Verifying Sensor Calibration: X
- PAN Verifying Mechanical Centering: ✓
- Laser Calibration: ✓
- CEPH Verifying X-Ray Alignment: ✓
- CEPH Verifying Sensor Compliance: X
- CEPH Verifying Sensor Calibration: X
- CEPH Verifying Mechanical Centering: ✓
- Headrest Calibration: ✓
- Nasion Calibration: ✓

Report PDF

Data
- Backup calibration data to file
- Restore calibration data from file

Close
### Machine Configuration

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine name</td>
<td>708B0042</td>
</tr>
<tr>
<td>Model</td>
<td>3D Model</td>
</tr>
<tr>
<td>Carousel type</td>
<td>ENABLE</td>
</tr>
<tr>
<td>Tube type</td>
<td>Tube 3D Model</td>
</tr>
<tr>
<td>Sensor PAN type</td>
<td>PAN 2D</td>
</tr>
<tr>
<td>Collimator type</td>
<td>0</td>
</tr>
<tr>
<td>Sensor CEPH type</td>
<td>CEPH 2D</td>
</tr>
<tr>
<td>Chinrest type</td>
<td>PRESENT</td>
</tr>
<tr>
<td>Panel CBCT type</td>
<td>CBCT 15x16</td>
</tr>
<tr>
<td>SN MACHINE</td>
<td>708B0042</td>
</tr>
<tr>
<td>SN MAIN BOARD</td>
<td>23455</td>
</tr>
<tr>
<td>SN CONVERTER/POWER BOARD</td>
<td>23455</td>
</tr>
<tr>
<td>SN BRUSHDC BOARD</td>
<td>23455</td>
</tr>
<tr>
<td>SN XRAY TUBE</td>
<td>23455</td>
</tr>
<tr>
<td>SN SENSOR 1</td>
<td>23456</td>
</tr>
<tr>
<td>SN SENSOR 2</td>
<td>23456</td>
</tr>
<tr>
<td>SN PANEL CBCT</td>
<td>23456</td>
</tr>
</tbody>
</table>

- **CHECK!** device with motorized collimator
- **CHECK!** device with CEPH arm
- **ONLY RP162 COMPLIANT OR UNITED KINGDOM**

**Device Installation and Calibration**

- **2D calibration**

**Notes:**
- Y Fine Adjust
- Parking
- Parking X: 0,00
- Parking Y: 35,00
- Parking R: -90,00
- Parking H: -175,00
- Aluminum filter
- **ONLY RP162 COMPLIANT OR UNITED KINGDOM**
4.6.4 PAN VERIFY X-RAY ALIGNEMENT

![Image of calibration steps]

- Machine Configuration: Complete
- PAN Verify X-Ray Alignment: Complete
- PAN Verify Sensor Compliance: Complete
- PAN Verify Sensor Calibration: Complete
- PAN Verify Mechanical Centering: Complete
- Laser Calibration: Complete
- CEPH Verify X-Ray Alignment: Complete
- CEPH Verify Sensor Compliance: Complete
- CEPH Verify Sensor Calibration: Complete
- CEPH Verify Mechanical Centering: Complete
- Headrest Calibration: Complete
- Nasion Calibration: Complete

Report PDF

Data:
- Backup calibration data to file
- Restore calibration data from file

Close
CASE 1 - MOTORIZED COLLIMATOR

Before start procedure remove any object between XRay source and sensor.

1. Start procedure

2. Start
If one of these situations occurs, it is necessary to manually regulate the collimator (see paragraph “Manual regulation of the collimator”).
DEVICE INSTALLATION AND CALIBRATION » 2D calibration

IF

1. Not Centered - Manually move collimator then press OK to take another image
2. PRESS XRAY BUTTON
3. OK
4. TARGET
5. 1/2

hyperion X5 2D CEPH/CEPH Ready - TECHNICAL MANUAL
DEVICE INSTALLATION AND CALIBRATION » 2D calibration
MANUAL REGULATION OF THE COLLIMATOR
(to be performed when strictly necessary)

• Rotation Regulation

1. MANUAL REGULATION OF THE COLLIMATOR
2. • Rotate - Manually rotate primary collimator then press OK
3. • Correctly positioned
4. • Not centered - Manually move fixed collimator then press OK to take another image

Select action
• **Horizontal Alignment**
DEVICE INSTALLATION AND CALIBRATION » 2D calibration
• **Vertical Alignment**
Select action:
- Rotate: Manually rotate primary collimator, then press OK.
- Correctly positioned.
- Not Centered: Manually move fixed collimator, then press OK to take another image.

1. Move the target.
2. Position the target as shown.
3. Press X-ray button.
4. Repeat steps 1-3 until centered.
5. Confirm target is correctly positioned.
6. Press OK to save.
7. Check calibration result.
CASE 2 - FIXED COLLIMATOR

Before start procedure remove any object between XRay source and sensor.
If one of these situations occurs, it is necessary to manually regulate the collimator (see paragraph “Manual regulation of the collimator”).
MANUAL REGULATION OF THE COLLIMATOR
(to be performed when strictly necessary)

- Rotation Regulation

1. [Image of collimator with labeled parts]

- Centered
- Not Centered - Manually move collimator then press OK to take another image

3. OK

4. [Image of user pressing X-ray button]
- **Horizontal Alignment**
Select action

- Rotate - Manually rotate primary collimator then press OK
- Correctly positioned
- Not Centered - Manually move fixed collimator then press OK to take another image

Press XRAY button

1. Rotate
2. Correctly positioned
3. Not Centered
4. Press XRAY button
5. Centered
6. OK
• **Vertical Alignment**
DEVICE INSTALLATION AND CALIBRATION » 2D calibration
1.1.1 PAN VERIFY SENSOR COMPLIANCE

![Calibration Steps](image)

- **Advanced**
- **Calibration step**
  - Machine Configuration
  - PAN Verify XRay Alignment
  - PAN Verify Sensor Compliance
  - PAN Verify Sensor Calibration
  - PAN Verify Mechanical Centering
  - Laser Calibration
  - CEPH Verify XRay Alignment
  - CEPH Verify Sensor Compliance
  - CEPH Verify Sensor Calibration
  - CEPH Verify Mechanical Centering
  - Headrest Calibration
  - Nason Calibration

![Report PDF](image)

**Data**

- Backup calibration data to file
- Restore calibration data from file

![Close](image)
Before starting the procedure, remove any objects between the X-ray source and sensor. Remove the headrest rubber supports and position the aluminum filter.

1. **Start**
2. **Start Procedure**
3. **PRESS XRAY BUTTON**
4. **Acquisition Server Plus 6.3.7.28**
   - Sensor Compliance procedure completed
4.6.5 PAN VERIFY SENSOR CALIBRATION

Calibration Steps

- Advanced
- Calibration step
- Status

- Machine Configuration
  - ✓

- PAN Verify XRay Alignment
  - ✓

- PAN Verify Sensor Compliance
  - ✓

- PAN Verify Sensor Calibration
  - ✓

- PAN Verify Mechanical Centering
  - ✓

- Laser Calibration
  - ✓

- CEPH Verify XRay Alignment
  - ✓

- CEPH Verify Sensor Compliance
  - ✓

- CEPH Verify Sensor Calibration
  - ✓

- CEPH Verify Mechanical Centering
  - ✓

- Headrest Calibration
  - ✓

- Nasion Calibration
  - ✓

Before start procedure remove any object between XRay source and sensor.

Start
Cancel
1. **Gain Acquisition**

   - **Sensor Calibration Gain**
     - **START PROCEDURE**
     - **Step 0 of 26**

2. **ATTENTION!!! DANGEROUS PROCEDURE**
   - Verify safety devices before proceed
   - **WARNING:** During procedure X-rays will be emitted automatically

3. **CALIBRATING WAIT... 15’**

4. **Sensor Calibration procedure completed**

5. **OK**
4.6.6 PAN VERIFY MECHANICAL CENTERING

Calibration Steps

- Advanced

Calibration step | Status
--- | ---
Machine Configuration | ✔
PAN Verify XRay Alignment | ✔
PAN Verify Sensor Compliance | ✔
PAN Verify Sensor Calibration | ✔
PAN Verify Mechanical Centering | ✔
Laser Calibration | ✔
CEPH Verify XRay Alignment | ✔
CEPH Verify Sensor Compliance | ✔
CEPH Verify Sensor Calibration | ✔
CEPH Verify Mechanical Centering | ✔
Headrest Calibration | ✔
Nasion Calibration | ✔

Report PDF

Data

- Backup calibration data to file
- Restore calibration data from file

Class
Before starting calibration procedure, remove any object between X-ray source and sensor and position technical phantom.

2 Start

3 Acquire
DEVICE INSTALLATION AND CALIBRATION » 2D calibration
4.6.7 LASER CALIBRATION

![Diagram of Calibration Steps]

- **Advanced**
  - **Calibration step**
    - Machine Configuration: ✔️
    - PAN Verify XRay Alignment: ✔️
    - PAN Verify Sensor Compliance: ✔️
    - PAN Verify Sensor Calibration: ✔️
    - PAN Verify Mechanical Centering: ✔️
    - Laser Calibration: ✔️
    - CEPH Verify XRay Alignment: ✔️
    - CEPH Verify Sensor Compliance: ✔️
    - CEPH Verify Sensor Calibration: ✔️
    - CEPH Verify Mechanical Centering: ✔️
    - Headrest Calibration: ✔️
    - Nasion Calibration: ✔️

- **Report PDF**

- **Data**
  - Backup calibration data to file
  - Restore calibration data from file

---

DEVICE INSTALLATION AND CALIBRATION » 2D calibration
2D calibration

Put mechanical template for laser in correct position and press Start button

Laser ON

OFF

STOP

Exit

Remove carter. The device will automatically move to position of laser calibration. Press OK to Continue

OK Cancel

See section “Covers removal”
TARGET

DEVICE INSTALLATION AND CALIBRATION » 2D calibration
If the laser turns off, any of the movement buttons of the column can be pressed to turn it on again.

**Laser alignment**

Laser Calibration

Start calibration

**Put mechanical template for laser in correct position and press Start button**

Laser ON OFF STOP

4 Exit
4.6.8 CEPH VERIFY X-RAY ALIGNMENT
(ONLY IF CEPH ARM IS PRESENT)
DEVICE INSTALLATION AND CALIBRATION » 2D calibration

3

CHECK!

4

START PROCEDURE

5

REMOVE

(See chapter “Covers removal”)
Before starting the procedure, remove any object between X-ray source and sensor and remove secondary collimator.

AP position

Warning: Headrest in wrong position. Rotate it to AP position before continuing the procedure.

Press X-ray button.
DEVICE INSTALLATION AND CALIBRATION » 2D calibration

Select action:
- Remove any object between cross source and sensor and press OK to take another image.
- Tap align - an arrow will be needed to take another image.

Press XRAY button.
DEVICE INSTALLATION AND CALIBRATION » 2D calibration

Press X-ray button: 14

Press X-ray button: 17

Select action:
- Take another image
- Edge not found - user will be asked to take another image

Image must be shaded on right edge as shown on the image on the left

Select action:
- Edge found
- Take another image

Image must be shaded on right edge as shown on the image on the left

Select action:
- Edge found
- Take another image
Device Installation and Calibration » 2D Calibration

1. Press the X-ray button.
2. Enter the information into the software.
3. Acquire the secondary collimator before continuing.
4. Reassemble the device.
If one of these situations occurs, it is necessary to manually regulate the collimator (see paragraph “Manual regulation of the secondary collimator”).
DEVICE INSTALLATION AND CALIBRATION » 2D calibration
device installation and calibration » 2D calibration
4.6.8.1 MANUAL REGULATION OF THE SECONDARY COLLIMATOR

(To be performed when strictly necessary)

1 REMOVE

(See chapter “Covers removal”)

- Rotation regulation
2D calibration

1. Check the centering of the target.
2. Adjust the collimator manually.
3. Confirm the adjustment and press OK.
4. Review the selection and OK.
5. Adjust the target orientation.
6. Press the X-ray button.
• **Horizontal alignment**

![Diagram showing horizontal alignment steps]

1. **Select action:**
   - Not Centred - Manually move sample then press OK to take another image

2. Manual adjustment for horizontal alignment

3. Confirm adjustment

4. Proceed with calibration

5. Press X-ray button

TARGET

DEVICE INSTALLATION AND CALIBRATION » 2D calibration
• **Vertical alignment**

1. Vertical alignment

![Vertical alignment diagram](image)

2. Vertical alignment

![Vertical alignment diagram](image)

3. Vertical alignment

![Vertical alignment diagram](image)
DEVICE INSTALLATION AND CALIBRATION » 2D calibration

1. Centered - Keep this position
2. Not Centered - Manually move collimator then press OK to take another image
3. X-ray Alignment procedure completed

Target

PRESS XRAY BUTTON

2D calibration

hyperion X5 2D CEPH/CEPH Ready - TECHNICAL MANUAL

EN
### 4.6.9 CEPH VERIFY SENSOR COMPLIANCE
*(ONLY IF CEPH ARM IS PRESENT)*

#### Calibration Steps

<table>
<thead>
<tr>
<th>Calibration step</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine Configuration</td>
<td>✔️</td>
</tr>
<tr>
<td>PAN Verify XRay Alignment</td>
<td>✔️</td>
</tr>
<tr>
<td>PAN Verify Sensor Compliance</td>
<td>✔️</td>
</tr>
<tr>
<td>PAN Verify Sensor Calibration</td>
<td>✔️</td>
</tr>
<tr>
<td>PAN Verify Mechanical Centering</td>
<td>✔️</td>
</tr>
<tr>
<td>Laser Calibration</td>
<td>✔️</td>
</tr>
<tr>
<td>CEPH Verify XRay Alignment</td>
<td>✔️</td>
</tr>
<tr>
<td>CEPH Verify Sensor Compliance</td>
<td>✔️</td>
</tr>
<tr>
<td>CEPH Verify Sensor Calibration</td>
<td>✔️</td>
</tr>
<tr>
<td>CEPH Verify Mechanical Centering</td>
<td>✔️</td>
</tr>
<tr>
<td>Headrest Calibration</td>
<td>✔️</td>
</tr>
<tr>
<td>Nasion Calibration</td>
<td>✔️</td>
</tr>
</tbody>
</table>

1. Click on **CEPH Verify Sensor Compliance**.

2. Click **START PROCEDURE**.

**Sensor compliance Failed**
Before start procedure remove any object between XRay source and sensor

3  Start  Cancel

Before start procedure remove any object between XRay source and sensor

4

Sensor compliance procedure completed

OK
4.6.10 CEPH VERIFY SENSOR CALIBRATION

(ONLY IF CEPH ARM IS PRESENT)
Before start procedure remove any object between Xray source and sensor.

2. Start calibration procedure.

3. Set Sensor Calibration Gain and start the procedure.


Warning: During procedure Xrays will be emitted automatically.
4.6.11 CEPH VERIFY MECHANICAL CENTERING  
(ONLY IF CEPH ARM IS PRESENT)
DEVICE INSTALLATION AND CALIBRATION » 2D calibration

1. Mechanical centering CEPH
2. START PROCEDURE
3. Before start procedure remove any object between X-ray source and sensor
4. PRESS XRAY BUTTON

hyperion X5 2D CEPH/CEPH Ready - TECHNICAL MANUAL
See section “CEPH arm installation”
If the image is not horizontally centred, follow the instructions to manually adjust the settings.
DEVICE INSTALLATION AND CALIBRATION » 2D calibration
4.6.12 HEADREST CALIBRATION
(ONLY IF CEPH ARM IS PRESENT)
2D calibration

Position headrest to PA position
Press OK to confirm

OK
DEVICE INSTALLATION AND CALIBRATION » 2D calibration

1. Position headrest to LAT position
   Press OK to confirm

2. Position headrest to AP position
   Press OK to confirm
6. Close headrest and press OK to confirm.

8. Open headrest and press OK to confirm.

4.6.13 NASION CALIBRATION
(ONLY IF CEPH ARM IS PRESENT)

1. Select NASION Calibration.

2. Click START PROCEDURE.
3. Close nasion calibration and press OK to confirm.

4. Click OK.

5. Open nasion calibration and press OK to confirm.

6. Click OK.
4.6.14 BACKUP CALIBRATION DATA TO FILE

1. Click on "Backup calibration data to file".
Backup data selection

- Device data
- PAN sensor data
- CEPH sensor data
- Tubehead calibration data

- Statistics

3. OK

4. Select Directory for backup data

5. Choose
4.6.15 ALIGNING THE EAR GUIDE RINGS

To check the correct alignment it is possible to take the image by using a CEPH mechanical positioning window or by launching the virtual keyboard and performing a CEPH LL examination.

- **Horizontal alignment**
1/2

4

PRESS XRAY BUTTON

BUTTON pressed
• **Vertical alignment**
5. CONTROL PANELS AND DISPLAY SYMBOLS

5.1 CONSOLE ONBOARD THE MACHINE

- **RESET**
- **ON**
- **STANDBY**
- **X-RAY READY**
- **INTERLOCK**

Canine cusp or condyle VERTICAL LASER POSITIONING (-) to frame the patient

Canine cusp or condyle VERTICAL LASER POSITIONING (+) to frame the patient

X-RAY EMISSION

COLUMN UPWARD MOVEMENT

COLUMN DOWNWARD MOVEMENT
5.2 PUSHBUTTON PANEL ON CEPH ARM

- **ON**
- **STANDBY**
- **X-RAY READY**
- **INTERLOCK**

- **COLUMN UPWARD MOVEMENT**
- **COLUMN DOWNWARD MOVEMENT**
6. SERVICE MENU

Method 1
Method 2

1. Click on the Tools button.

2. Choose Insert password.

3. Enter the password 306090 and click Ok.
7. CIRCUIT BOARDS

**IMPORTANT:** Before carrying out any maintenance work on electronic boards or wiring it is necessary to switch off the machine and wait until all the LEDs on the boards go out. Do not disconnect/reconnect wires or leads with the machine on.

7.1 UNIT BLOCK DIAGRAM
7.2 LOGIC BOARD (97661808)

LOGIC board
7.2.1 CONNECTOR LIST

<table>
<thead>
<tr>
<th>CONNECTOR</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1</td>
<td>Power supply input from POWER board</td>
</tr>
<tr>
<td>K2</td>
<td>Collimator motor</td>
</tr>
<tr>
<td>K3</td>
<td>Power supply and sync signal PAN/3D sensor</td>
</tr>
<tr>
<td>K4</td>
<td>CAN towards POWER connection (only if BRUSHDC is present)</td>
</tr>
<tr>
<td>K5</td>
<td>Collimator photocell</td>
</tr>
<tr>
<td>K8</td>
<td>Y axis motor</td>
</tr>
<tr>
<td>K9</td>
<td>Y axis photocell</td>
</tr>
<tr>
<td>K10</td>
<td>Ethernet 100Mb to PC</td>
</tr>
<tr>
<td>K13</td>
<td>CAN towards POWER or BRUSHDC</td>
</tr>
<tr>
<td>K14</td>
<td>R axis motor</td>
</tr>
<tr>
<td>K15</td>
<td>R axis photocell</td>
</tr>
<tr>
<td>K16</td>
<td>Keyboard signals connector</td>
</tr>
<tr>
<td>K20</td>
<td>CEPH motor</td>
</tr>
<tr>
<td>K22</td>
<td>CEPH limit switch</td>
</tr>
<tr>
<td>K23 / K26</td>
<td>Monobloc lasers</td>
</tr>
<tr>
<td>K24</td>
<td>Chin rest lasers</td>
</tr>
<tr>
<td>K36</td>
<td>CEPH sensor synchronization/power supply</td>
</tr>
<tr>
<td>K39</td>
<td>Myray logo backlight power supply</td>
</tr>
<tr>
<td>K41</td>
<td>Chinrest microswitch</td>
</tr>
<tr>
<td>K42</td>
<td>Power supply towards BRUSHDC</td>
</tr>
<tr>
<td>K43 / K44</td>
<td>CEPH keyboard</td>
</tr>
</tbody>
</table>

7.2.2 DIAGNOSTIC LEDS

<table>
<thead>
<tr>
<th>NAME</th>
<th>COLOUR</th>
<th>SCREEN PRINTING</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>DL1</td>
<td>Yellow</td>
<td>ACT</td>
<td>CAN activity. Normally on flashing. On steady or off in case of CAN error condition.</td>
</tr>
<tr>
<td>DL2</td>
<td>Red</td>
<td>ERR</td>
<td>Error status, normally off. Flashing upon startup, the number of flashes represents the FW version. When ERR is on the number of flashes from CPU LED represents the error code.</td>
</tr>
<tr>
<td>DL3</td>
<td>Green</td>
<td>CPU</td>
<td>Normally flashing at 1Hz. When ERR is on the number of flashes from CPU LED represents the error code.</td>
</tr>
<tr>
<td>DL4</td>
<td>Yellow</td>
<td>MOT. ENB</td>
<td>Motors enabled, normally on</td>
</tr>
<tr>
<td>DL5</td>
<td>Green</td>
<td>SYNC PAN</td>
<td>Logic-PAN sensor sync signal</td>
</tr>
<tr>
<td>DL7</td>
<td>Green</td>
<td>X MOT</td>
<td>On if X motor is active. If flashing the motor is in error (disconnected, short-circuit, overheating, broken driver)</td>
</tr>
<tr>
<td>DL8</td>
<td>Green</td>
<td>Y MOT</td>
<td>On if Y motor is active. If flashing the motor is in error (disconnected, short-circuit, overheating, broken driver)</td>
</tr>
<tr>
<td>DL9</td>
<td>Green</td>
<td>H MOT</td>
<td>On if H motor is active. If flashing the motor is in error (disconnected, short-circuit, overheating, broken driver)</td>
</tr>
<tr>
<td>DL10</td>
<td>Green</td>
<td>R MOT</td>
<td>On if R motor is active. If flashing the motor is in error (disconnected, short-circuit, overheating, broken driver)</td>
</tr>
<tr>
<td>DL11</td>
<td>Green</td>
<td>PROG</td>
<td>FPGA on, normally flashing (3Hz)</td>
</tr>
<tr>
<td>DL12</td>
<td>Green</td>
<td>RUN</td>
<td>FPGA programmed, normally on</td>
</tr>
<tr>
<td>DL13</td>
<td>Green</td>
<td>SYNC</td>
<td>Synchronization 3D pulses (from POWER)</td>
</tr>
<tr>
<td>DL14</td>
<td>Green</td>
<td>ENABLE</td>
<td>ON if POWER enabled</td>
</tr>
<tr>
<td>Circuit Board</td>
<td>Color</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>-------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>DL15</td>
<td>ACK</td>
<td>Not used</td>
<td></td>
</tr>
<tr>
<td>DL16</td>
<td>Yellow</td>
<td>XRAY</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HW-Rays emission signal from POWER board, normally off (On during ray emission)</td>
<td></td>
</tr>
<tr>
<td>DL18</td>
<td>Yellow</td>
<td>ACT</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>LAN activity LED. Normally flashing.</td>
<td></td>
</tr>
<tr>
<td>DL19</td>
<td>Green</td>
<td>LINK</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>LAN connection established. Normally on.</td>
<td></td>
</tr>
<tr>
<td>DL22</td>
<td>Green</td>
<td>3.3V</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.3V CPU tension present, normally on</td>
<td></td>
</tr>
<tr>
<td>DL23</td>
<td>Green</td>
<td>24V</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>24V tension present, normally on</td>
<td></td>
</tr>
<tr>
<td>DL24</td>
<td>Green</td>
<td>5.0V</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5V CPU tension present, normally on</td>
<td></td>
</tr>
<tr>
<td>DL25</td>
<td>Green</td>
<td>1.2V</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.2V CPU tension present, normally on</td>
<td></td>
</tr>
<tr>
<td>DL29</td>
<td>Green</td>
<td>DL29</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ON if CEPH axis fuse OK</td>
<td></td>
</tr>
<tr>
<td>DL30</td>
<td>Green</td>
<td>DL30</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CEPH photocell. On if photocell is obscured or disconnected/broken.</td>
<td></td>
</tr>
<tr>
<td>DL32</td>
<td>Green</td>
<td>DL32</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ON if R axis fuse OK</td>
<td></td>
</tr>
<tr>
<td>DL33</td>
<td>Green</td>
<td>DL33</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>If ON, R-axis photocell obscured or disconnected</td>
<td></td>
</tr>
<tr>
<td>DL35</td>
<td>Green</td>
<td>DL35</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ON if collimator fuse OK</td>
<td></td>
</tr>
<tr>
<td>DL36</td>
<td>Green</td>
<td>DL36</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Collimator photocell. On if photocell is obscured or disconnected/broken</td>
<td></td>
</tr>
<tr>
<td>DL38</td>
<td>Green</td>
<td>DL38</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ON if Y axis fuse OK</td>
<td></td>
</tr>
<tr>
<td>DL39</td>
<td>Green</td>
<td>DL39</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>If ON, Y-axis photocell obscured or disconnected</td>
<td></td>
</tr>
<tr>
<td>DL41</td>
<td>Green</td>
<td>SYNC CEPH</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>LOGIC-CEPH sensor synchronization signal</td>
<td></td>
</tr>
<tr>
<td>DL43</td>
<td>Green</td>
<td>PAN IN</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PAN sensor present, normally off. On if broken cable or PAN sensor removed</td>
<td></td>
</tr>
<tr>
<td>DL44</td>
<td>Green</td>
<td>CEPH IN</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CEPH sensor present, normally off. On if broken cable or CEPH sensor removed</td>
<td></td>
</tr>
<tr>
<td>DL46</td>
<td>Green</td>
<td>PAN ON</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>48V PAN Sensor power supply ok. Normally on. Off during standby or in error condition on sensor or interface board</td>
<td></td>
</tr>
<tr>
<td>DL47</td>
<td>Green</td>
<td>CEPH ON</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>48V CEPH Sensor power supply ok. Normally on. Off during standby or in error condition on sensor or interface board</td>
<td></td>
</tr>
<tr>
<td>DL49</td>
<td>Green</td>
<td>48V</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>48V Sensor power supply ok. Normally on. Off during standby or in error condition on sensor or interface board</td>
<td></td>
</tr>
<tr>
<td>DL53</td>
<td>Green</td>
<td>CHIN-L</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OFF if chinrest not present or chinrest in left position</td>
<td></td>
</tr>
<tr>
<td>DL54</td>
<td>Green</td>
<td>CHIN-R</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OFF if chinrest not present or chinrest in right position</td>
<td></td>
</tr>
<tr>
<td>DL56</td>
<td>AUX2</td>
<td>Not used</td>
<td></td>
</tr>
<tr>
<td>DL57</td>
<td>Green</td>
<td>AUX1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ON if BRUSHDC enabled</td>
<td></td>
</tr>
</tbody>
</table>
7.3 POWER BOARD (97662307)
### 7.3.1 Connector List

<table>
<thead>
<tr>
<th>Connector</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1</td>
<td>Column motor power supply</td>
</tr>
<tr>
<td>K2</td>
<td>Column motor thermal sensor</td>
</tr>
<tr>
<td>K3</td>
<td>Monoblock High voltage</td>
</tr>
<tr>
<td>K4</td>
<td>Power switch live wire</td>
</tr>
<tr>
<td>K5</td>
<td>Power switch neutral wire</td>
</tr>
<tr>
<td>K7</td>
<td>Gigabit switch power supply</td>
</tr>
<tr>
<td>K9</td>
<td>Monobloc feedback</td>
</tr>
<tr>
<td>K10</td>
<td>X-ray button (1/2 = Button, 3 = Ready, 4 = X-Ray)</td>
</tr>
<tr>
<td>K11</td>
<td>Door interlock</td>
</tr>
<tr>
<td>K12</td>
<td>External emergency button</td>
</tr>
<tr>
<td>K13</td>
<td>Column upper endpoint photocell</td>
</tr>
<tr>
<td>K14</td>
<td>External signal lamps (Wires 1, 2 ready - Wires 3, 4 X-ray emission)</td>
</tr>
<tr>
<td>K15</td>
<td>Machine On-Board Emergency Access</td>
</tr>
<tr>
<td>K16</td>
<td>LOGIC-board power supply</td>
</tr>
<tr>
<td>K17</td>
<td>Mains power supply</td>
</tr>
<tr>
<td>K18</td>
<td>Column lower endpoint photocell</td>
</tr>
<tr>
<td>K21</td>
<td>CAN towards LOGIC or BRUSHDC</td>
</tr>
<tr>
<td>K22</td>
<td>Column anti-pinch switch</td>
</tr>
</tbody>
</table>

### 7.3.2 Diagnostic LEDs

<table>
<thead>
<tr>
<th>Name</th>
<th>Colour</th>
<th>Screen Printing</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DL1</td>
<td>Yellow</td>
<td>ACT</td>
<td>CAN communication activity: normally flashing. Problems on CAN bus if off or on steady</td>
</tr>
<tr>
<td>DL2</td>
<td>Red</td>
<td>ERR</td>
<td>Error status, normally off. Flashing upon startup, the number of flashes represents the FW version. When ERR is on the number of flashes from CPU LED represents the error code.</td>
</tr>
<tr>
<td>DL3</td>
<td>Green</td>
<td>CPU</td>
<td>Normally flashing at 1Hz (10Hz during column movement or x-ray emission). When ERR is on the number of flashes from CPU LED represents the error code.</td>
</tr>
<tr>
<td>DL4</td>
<td>Yellow</td>
<td>UP</td>
<td>Normally off, if on the upper column endpoint has been reached. Always on if photocell damaged or disconnected.</td>
</tr>
<tr>
<td>DL5</td>
<td>Yellow</td>
<td>DN</td>
<td>Normally off, if on the upper column endpoint has been reached. Always on if photocell damaged or disconnected.</td>
</tr>
<tr>
<td>DL6</td>
<td>Red</td>
<td>STOP</td>
<td>Normally off, if on the anti-pinch microswitch has been pushed. Always on if microswitch damaged or disconnected.</td>
</tr>
<tr>
<td>DL8</td>
<td>Yellow</td>
<td>VAC</td>
<td>On when mains power supply is on. Off during stand by or in case of issues with power amplifier on the board.</td>
</tr>
<tr>
<td>DL9</td>
<td>Yellow</td>
<td>VDC</td>
<td>On when 395V are present on power amplifier. Off when in stand-by or in case of issues with the power amplifier.</td>
</tr>
<tr>
<td>DL10</td>
<td>Green</td>
<td>-5VA</td>
<td>Analog -5.3V present, normally on</td>
</tr>
<tr>
<td>DL11</td>
<td>Green</td>
<td>+5VA</td>
<td>Analog +5.3V present, normally on</td>
</tr>
<tr>
<td>DL12</td>
<td>Green</td>
<td>SW</td>
<td>On if switch GBIT power supply present</td>
</tr>
<tr>
<td>DL13</td>
<td>Green</td>
<td>18V</td>
<td>18V driver tension present, normally on</td>
</tr>
<tr>
<td>DL14</td>
<td>Green</td>
<td>12V</td>
<td>12V driver tension present, normally on</td>
</tr>
<tr>
<td>DL15</td>
<td>Green</td>
<td>5V</td>
<td>5V CPU tension present, normally on</td>
</tr>
<tr>
<td>DL16</td>
<td>Green</td>
<td>12V</td>
<td>12V for x-ray button, emergency button and interlock, normally on.</td>
</tr>
<tr>
<td>DL17</td>
<td>Green</td>
<td>3.3V</td>
<td>3.3V CPU tension present, normally on</td>
</tr>
<tr>
<td>DL18</td>
<td>Green</td>
<td>24V</td>
<td>24V tension present, normally on</td>
</tr>
<tr>
<td>DL19</td>
<td>Green</td>
<td>SYNC</td>
<td>Flashing CBCT during frame acquisition</td>
</tr>
<tr>
<td>DL20</td>
<td>Green</td>
<td>ENB</td>
<td>Inverter enabled signal from LOGIC board, normally on. Off during standby or in error condition.</td>
</tr>
<tr>
<td>DL21</td>
<td>ACK</td>
<td></td>
<td>Not used</td>
</tr>
<tr>
<td>DL22</td>
<td>Green</td>
<td>RDYL</td>
<td>External “ready” lamp relay status. Normally off, on when unit is “ready”.</td>
</tr>
<tr>
<td>DL23</td>
<td>Yellow</td>
<td>XRYL</td>
<td>External “x-ray on” lamp relay status. Normally off, on during x-ray emission.</td>
</tr>
<tr>
<td>DL24</td>
<td>Green</td>
<td>BUT</td>
<td>Xray button pressed. On when x-ray button is pressed.</td>
</tr>
<tr>
<td>DL25</td>
<td>Yellow</td>
<td>ILK</td>
<td>Interlock status. Normally off. On if door is open or interlock is not connected.</td>
</tr>
<tr>
<td>DL26</td>
<td>Red</td>
<td>EMG</td>
<td>External emergency button status. Normally off. On if external emergency button status is pressed or not connected.</td>
</tr>
<tr>
<td>DL27</td>
<td>Yellow</td>
<td>FIL</td>
<td>X-ray filament on. On during emission.</td>
</tr>
<tr>
<td>DL28</td>
<td>Yellow</td>
<td>INV</td>
<td>Inverter on. On during emission</td>
</tr>
<tr>
<td>DL29</td>
<td>Yellow</td>
<td>DRV</td>
<td>Driver enabled, normally on. Off during standby or in error condition.</td>
</tr>
<tr>
<td>DL30</td>
<td>Yellow</td>
<td>48V</td>
<td>48V tension ON. Off during standby or in error condition.</td>
</tr>
<tr>
<td>DL31</td>
<td>Yellow</td>
<td>ON</td>
<td>Mains power supply to power amplifier relay status. Off during standby or in error condition.</td>
</tr>
<tr>
<td>DL32</td>
<td>Yellow</td>
<td>PC</td>
<td>Preload resistance by-pass relay. Off during standby or in error condition.</td>
</tr>
<tr>
<td>DL33</td>
<td>Red</td>
<td>EMG</td>
<td>Integrated emergency button status. Normally off. On if integrated emergency button status is pressed or not connected.</td>
</tr>
<tr>
<td>DL34</td>
<td>Red</td>
<td>MT</td>
<td>Column engine overload. Normally off. On when thermal sensor is active or not connected.</td>
</tr>
</tbody>
</table>
7.4 BRUSH DC (97662306)
### 7.4.1 Connector List

<table>
<thead>
<tr>
<th>CONNECTOR</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1</td>
<td>24V/48V power supply from LOGIC</td>
</tr>
<tr>
<td>K2</td>
<td>Revolver motor</td>
</tr>
<tr>
<td>K5/K6</td>
<td>Revolver limit switch</td>
</tr>
<tr>
<td>K13</td>
<td>CAN towards POWER</td>
</tr>
<tr>
<td>K14</td>
<td>CAN towards LOGIC</td>
</tr>
</tbody>
</table>

### 7.4.2 Diagnostic LEDs

<table>
<thead>
<tr>
<th>NAME</th>
<th>COLOUR</th>
<th>SCREEN PRINTING</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>DL41</td>
<td>Red</td>
<td>ERR</td>
<td>ON in error condition</td>
</tr>
<tr>
<td>DL42</td>
<td>Green</td>
<td>CPU</td>
<td>Flashing if CPU is OK</td>
</tr>
<tr>
<td>DL44</td>
<td>Yellow</td>
<td>ACT</td>
<td>Flashing if CAN communication is OK</td>
</tr>
<tr>
<td>DL45</td>
<td>Green</td>
<td>ENBX</td>
<td>X axis motor (ON if active)</td>
</tr>
<tr>
<td>DL47</td>
<td>Green</td>
<td>ENB</td>
<td>ON if enabling from LOGIC present</td>
</tr>
<tr>
<td>DL48</td>
<td>AUX</td>
<td></td>
<td>Not used</td>
</tr>
<tr>
<td>DL49</td>
<td>Green</td>
<td>OUT</td>
<td>On</td>
</tr>
<tr>
<td>DL50</td>
<td>DRV</td>
<td></td>
<td>Not used</td>
</tr>
<tr>
<td>DL51</td>
<td>Green</td>
<td>24V</td>
<td>On it 24V power supply present</td>
</tr>
<tr>
<td>DL52</td>
<td>Green</td>
<td>5.0V</td>
<td>On it 5.0V power supply present</td>
</tr>
<tr>
<td>DL53</td>
<td>Green</td>
<td>3.3V</td>
<td>On it 3.3V power supply present</td>
</tr>
<tr>
<td>DL54</td>
<td>Green</td>
<td>48V</td>
<td>On it 48V power supply present</td>
</tr>
<tr>
<td>DL55</td>
<td>Green</td>
<td>DL55</td>
<td>ON if X axis fuse OK</td>
</tr>
<tr>
<td>DL56</td>
<td>Green</td>
<td>MINX</td>
<td>PAN limit switch (ON if darkened)</td>
</tr>
<tr>
<td>DL57</td>
<td>Green</td>
<td>MAXXX</td>
<td>CEPH limit switch (ON if darkened)</td>
</tr>
</tbody>
</table>
7.5 CEPH KEYBOARD (97661913)
### 7.5.1 Connector List

<table>
<thead>
<tr>
<th>Connector</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1 / K11</td>
<td>Logic board connection</td>
</tr>
<tr>
<td>K12</td>
<td>Ear guides potentiometer</td>
</tr>
<tr>
<td>K13</td>
<td>Nasion potentiometer</td>
</tr>
<tr>
<td>K14</td>
<td>Cephalostat drum sensors</td>
</tr>
</tbody>
</table>
7.6 PAN SENSOR INTERFACE (97661912)

7.6.1 CONNECTOR LIST

<table>
<thead>
<tr>
<th>CONNECTOR</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1</td>
<td>Synchronization signals from LOGIC</td>
</tr>
<tr>
<td>K2</td>
<td>Connector for switch GBIT</td>
</tr>
</tbody>
</table>
7.7 CEPH SENSOR INTERFACE (97661912)

7.7.1 CONNECTOR LIST

<table>
<thead>
<tr>
<th>CONNECTOR</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1</td>
<td>Synchronization signals from LOGIC</td>
</tr>
<tr>
<td>K2</td>
<td>Connector for switch GBIT</td>
</tr>
</tbody>
</table>
7.8 3D PANEL INTERFACE (97661579)
### 7.8.1 CONNECTOR LIST

<table>
<thead>
<tr>
<th>CONNECTOR</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1</td>
<td>Synchronization signals from LOGIC</td>
</tr>
<tr>
<td>K2</td>
<td>Power supply towards panel</td>
</tr>
<tr>
<td>K3</td>
<td>Synchronization signals towards panel</td>
</tr>
</tbody>
</table>
7.9 KEYBOARD (97661484)

7.9.1 CONNECTOR LIST

<table>
<thead>
<tr>
<th>CONNECTOR</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1</td>
<td>LOGIC board connection</td>
</tr>
</tbody>
</table>
8. CONNECTIVITY

8.1 2D SENSORS / 3D PANEL IP ADDRESS AMENDMENT

8.2 FIRMWARE UPGRADE
8.3 REMOTE SUPPORT

1. Click on the remote support icon.


3. Enter ID and Password.

4. Connect to the remote session.

Please contact Service and provide them ID and Password in order to enable the remote session.