ESAOTE S.p.A.

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61XX

SERVICE MANUAL

8310064000

Introduction

This manual describes for the Service technicians the 6100 and 6150 (61XX) systems functions and the block diagram of the boards that implements these functions.

The service manual is available in English only.

The manual is addressed to all the Service centres directly authorised by ESAOTE. All the operations described in this manual are not critical from a safety point of view.

Do not attempt to service 61XX unless this service manual has been consulted and understood.

The enter and context menu keys are respectively indicated as **ENTER** and **UNDO** keys in this manual.

The RGB monitor and LCD display are not considered to be a field serviceable item, therefore the manual doesn't include its block and electric diagrams.

Sections Overview

This Service Manual is composed of the following sections:

- Section 1: 61XX Service Characteristics
- Section 2: Disassembling/Assembling
- Section 3: 61XX Block Diagram
- Section 4: Parts Lists
- Section 5: Configurations and Calibrations
- Section 6: Maintenance Procedures
- Section 7: Troubleshooting
- Section 8: Check Lists
- Section 9: Virtual Navigator
- Section 10: DICOM

In this manual a **WARNING** pertains to possible injury to the operator. A **CAUTION** describes the precautions which are necessary to protect the equipment. **Be sure that you understand and observe each of the cautions and warnings.**

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Chapter

1 - Service Characteristics

The aim of this introductory chapter is to illustrate some of the characteristics of the 61XX of fundamental importance to the technical staff, in particular, where to find the equipment status and how to keep it up to date.

Identifying the Boards

61XX design is based on the use of modular, functionally isolated printed circuit boards (PCBs) and subassemblies known as Field Replaceable Unit. This modularization greatly simplifies on-site service and repair. In most cases, on-site maintenance is accomplished by removing and replacing the PCBs or subassemblies.

Most boards of the 61XX are identified:

- by its Reference (950..) and its description, which is always indicated on the labels bar.
- by the Serial Number (SN), indicated on the labels bar.



• by the Configuration Index (CI), indicated by two decimal figures on the labels bar. The Configuration Index represents the HW level of the board. The Configuration Index is loaded in specific components mounted on each board.



In the boards not equipped with flap this information is on labels affixed on the printed circuit.

Configuration Screens



From the keyboard you can display the Configuration Screens pressing **MENU** and selecting the desired option.

System software

Press MENU and select SYSTEM INFO: the unit will show the current system's software version

INSTEMAVERSION	LAN-TO M RES. 0.199.0	
	SUIGAT ES (NO	

Licenses

Press MENU and select LICENSES: the unit will show the following screen

APPLICATIO	1657	9700xt	
	10000000		
AND ALL DRACING	PERMIT	1-428	AUNIDIC
ANDRONAC		1000	FRAME/
entration of the		Colta:	-789.00
1421		VINTURA INVESTIGATION - EARLIE	Intellin
- UCCLLC-SHELRTA		VITTORS ANALYSISTOR - ADVANCED	ntraducto
Therease		CONTRACTOR - DEDINGUISSING	ODHELLO
- Harley Control of Co		20-01	FORMULT
seam.	risenen (HETAL HADN'T DOOL!	-79155
Ce-alta:		1011	100000
	and the second second	TIMES SALETTY ANYTH	
ADULT CETAKIST	PERCENT.	-	VEHELLO
DATOBAC	TENNOT		

The screen is organized in three folders:

- System Info
- Applications
- Options

To select a folder, use the trackball to position the cursor over the correct tab and press **ENTER**.

See further in this manual to know how to activate a Demo license

If a demo license has been activated, this tab shows the elapsed time and the time left.

Refer to the user manual for further information

Chapter

2 - Equipment

In this chapter are listed the tools you need in order to access the 61XX internal parts, to activate the Service procedures and to perform a functional test of the unit.

Disassembling Equipment

In order to access the 61XX, the following tools are needed:

The disassembling procedures are detailed in Section 2

Tool	Dimension
Dynamometric Phillips electric screwdriver	Large, medium and small tips
Short Philips screwdriver	Small tip
Slotted screwdriver	Large and small tips
Box wrench	
Allen screwdriver	
Socket Wrench	
Tweezer	
Point pliers	Small tip

The use of an electric screwdriver allows the access time to be minimized. Low torques are recommended.

Service Procedures

The service procedures that require an interaction with the unit, as for example the language setting, can be activated only through the service key.

The service key is one USB key which allows the Technician to start the unit in service modality. It's necessary to connect the key to one of the frontal USB plugs with the unit off and then turning the system on.

Service key *P/N 8610264000*



Figure 1 (USB Service key)

Figure 2 (key inserted)

With the USB service key connected the system starts with Windows XP and it's possible to enter in the various menu of the unit, add/remove programs/SW/files.

Without this HW key it's not possible to access to the system's error files (it's only possible to download them by main menu).

If the procedure is not carried out properly, the system doesn't allow the access to the menu and, in some cases, the following message is shown:





The symbol shown on the left is used in this manual to indicate all the procedures that require the use of the key.

Access with password

There is the possibility to access as administrator to WIN XP only by using a password which is "laser". To enter as "Administrator" it's necessary to push the shift key as soon as the system starts and keep it pushed till a windows of the login will appear. Then it's necessary to write in the user field "Administrator" and in the password "laser". Compared with the service key this way has less rights.

Starting the SW releases 2.0 it's not allowed to start MyLab SW after entering using the "SHIFT" way.

USB Medium and Re-writable CD

To perform a complete check of the unit, it is suggested to always have an USB medium and a re-writable CD. These tools allow the service technician to test the functioning of the DVD burner and of the USB ports.

Upgrading Disks

It is suggested to always have the last revision of the unit upgrading and Recovery Disk together with the pertaining upgrading instructions. These tools allow the service technician to install again the software on the unit, should it be necessary.

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3 - Precautions

A series of precautions that must be observed each time you perform an operation on the 61XX are emphasised below:

- the equipment must always be switched off and disconnected by the main power supply before carrying out any service operation. In the same way, all the probes and peripherals (external monitor, printer, video-recorder...) must also be disconnected and placed in a safe place.
- the boards must be removed when the equipment is powered off.
- an electrostatic discharge occurring through the contact with the operator, can irreparably damage the electronic components on 61XX boards, that are sensitive to electro-static discharges: we therefore recommend that you take precautions to prevent these discharges each time a board has to be removed/installed. In operational terms, this means:
 - the machine must rest on an electro-static mat connected to earth.
 - the service technician must also be connected to the same earth each time he removes or installs the boards.
 - the boards and components must always be moved in their special electro-static containers.
 - for the service on the field, use the specific kits including the anti-static mat.

The chapter entitled "61XX Parts List" details the sub-assemblies that are to be considered sensitive to electro-static discharges (ESD).

When the board is ESD sensitive, you can find on the PCB master this symbol.



REFERENCE: IEC 1340-5-1 (2007)

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Chapter

1 - How to remove the 61XX covers

This chapter describes how to remove/assemble the covers of the 61XX and the monitor. In order to carry out all the removal procedures, you must disconnect and remove all the connected peripherals, the probes and power cable.

The disassembling instructions are separately given for each part of the unit (Monitor, Softkey section,..).

Chassis Section

This section describes the procedures to access all the covers of the Chassis section. The procedures refer to the unit in its close position with the wheels locked.

Unit Back Side

Unit Front Side



System Close Position

In order to improve system design and ergonomic, a new articulated monitor arm has been introduced.



Right and Left covers

Tools

No tool is required.



1⁄4 h

References

Part	Reference
7350-61XX right cover	9102961000
7350-61XX left cover	9102962000

Removal procedure

• Pull the cover outwards.

Assembly procedure



Right and Left bumpers

Tools





1⁄4 h

References

Part	Reference
6100 right bumper	9103229000
6100 left bumper	9103230000
7350-6150 right bumper	9102963000
7350-6150 left bumper	9102964000

Removal procedure

• Pull the bumper outwards.

Assembly procedure

Carry out the inverse of the removal procedure.

Once both the cover and the bumper have been removed you get access to the boards baskets. The **PC Basket** is on the left side and the **Boards Basket** is in the right side. For further details please refer to the next chapter.

Rear cover

Tools

Tool	Dimension
Phillips electric	Medium tip
screwdriver	
Straight head screwdriver	Large tip

¹∕₄ h

References

Part	Reference
6100 rear cover	9103231000
7350-6150 rear cover	9102965000

Removal procedure

- Unscrew the two (2) straight head screws that keeps the cover closed and open it.
- Unscrew the two (2) screws fixing the piston to the rear cover.



• Free the rear covers from the two upper lateral cogs and remove it.

Assembly procedure

Carry out the inverse of the removal procedure.

Rear bumper

Tools

No tool is required.



1⁄4 h

References

Part	Reference
7350-61XX rear bumper	9102966000

Removal procedure

- Remove both lateral covers.
- Open the bumper by lifting and pulling it up.
- Place the bumper in correspondence with the large holes of the metallic support.
- Apply a slight pressure on the screws to push them inwards and remove the bumper.

Assembly procedure

Upper Metallic Covers

Tools

1⁄4 h

No tool is required.



References

Part	Reference
6100 upper metallic cover	9102869000
6150 upper metallic cover (without Virtual Navigator)	9102869510
6150 upper metallic cover (with Virtual Navigator)	9102869520
61XX upper lateral metallic cover	8108201500

Removal procedure

• Remove the upper metallic covers by pulling them up. The covers are secured by four magnets.

Assembly procedure

Carry out the inverse of the removal procedure.

Upper Metallic Small Cover

Tools

Tool	Dimension
Philips head screwdriver	Medium tip

1⁄4 h

References

Part	Reference
6100 upper metallic small cover (without Virtual Navigator)	9102903000
6100 upper metallic small cover (with Virtual Navigator)	9102903010
6150 upper metallic small cover (without Virtual Navigator)	8107946510
6150 upper metallic small cover (with Virtual Navigator)	8107946520

Removal procedure for 6100

- Remove the upper metallic covers by pulling them up.
- Unscrew the two (2) screws fixing the metallic upper small cover to the chassis and remove it.
- Remove the cover.

SECTION 2

Removal procedure for 6150

- Remove the right and left plastic covers by pulling them.
- Unscrew the two (2) screws (the screw position is shown in the below photo) fixing the metallic upper small cover to the chassis and remove it.



• Remove the cover.

Assembly procedure

Upper Plastic Cover

Tools

Tool	Dimension
Box wrench	10 mm
Philips head screwdriver	Large and Small tip

1⁄4 h

References

Part	Reference
6100 upper plastic cover	9102877000
6150 upper plastic cover	9102877500

Removal procedure for 6100

- Remove the upper metallic covers by pulling them up.
- Remove the metallic upper small cover.
- Unscrew the seven (7) Philips head screws that fix the upper plastic cover to the chassis.
- Unscrew the four (4) Philips head screws that fix the upper plastic cover to the column.
- Remove the plastic shells for the columns.
- Unscrew the one (1) Philips head screw under the rear column's shell.
- Remove the upper plastic cover.

Removal procedure for 6150

- Remove the upper metallic covers by pulling them up.
- Remove the metallic upper small cover.
- Unscrew the nine (9) Philips head screws that fix the upper plastic cover to the chassis.
- Remove the upper plastic cover sliding it from the bottom.

Assembly procedure

Carry out the inverse of the removal procedure.

Spare part

The spare upper plastic over includes all the magnets and the two belts.

Front cover

Tools

Tool	Dimension
Phillips electric	Medium tip
screwdriver	



1⁄4 h

References

Part	Reference
6100 front cover	9103232000
7350-6150 front cover	9103097000

Removal procedure

- Remove both lateral covers.
- Remove the upper metallic large covers by pulling them up.
- Remove the upper metallic small cover.
- Loose the four (4) Philips head screws that fix laterally the front cover to the unit chassis.
- Loose the two (2) screws placed up, inside the upper part of the chassis. (see the below photo).



• Lift the front cover upwards and remove it.

Assembly procedure

Front bumper

Ģ
Co t 2

Tool	Dimension
Allen screwdriver	5 mm
Philips head screwdriver	Small tip

1⁄4 h

Tools

References

Part	Reference
7350-61XX front bumper	9102967000

Removal procedure

- Remove the front cover.
- Unscrew the two (2) Allen screws fixing the bumper. The left screw position is shown in the below photo.



• Unscrew the two (2) Philips head screws placed under the bumper.



• Remove the bumper.

Assembly procedure

Posterior Wheel Cover

Tools

Tool	Dimension
Straight head screwdriver	-



CAUTION

1⁄4 h

References

Part	Reference
61XX posterior wheel cover	8107410000

Removal procedure

• Remove the wheel cover using the screwdriver as lever to part the cover from the wheel.

Assembly procedure

Carry out the inverse of the removal procedure.

Posterior Wheel

Tools

Tool	Dimension
Pointer pliers	Small tip

1⁄4 h

It is strongly recommended to perform this operation in two persons.

References

Part	Reference
6100 posterior wheel	8107810000
6150 posterior wheel	8107810500

Removal procedure

- Remove the monitor.
- Be sure that the keyboard is blocked in its close position.
- Rotate the front wheels so that they can be locked.
- Remove the posterior wheel cover.
- Tip the unit laterally to gain access to the wheel to be removed.
- With the pliers open the ring fixing the wheel to its rotation axis and remove the ring.



• Remove the wheel.

Assembly procedure

Carry out the inverse of the removal procedure.

Anterior Wheel

Tools

Tool	Dimension
Allen screwdriver	6 mm

1⁄4 h

CAUTION

It is strongly recommended to perform this operation in two persons.

References

Part	Reference
61XX anterior wheel	100000109

Removal procedure

- Remove the monitor.
- Be sure that the keyboard is blocked in its close position.
- Rotate the front wheels so that they can be locked.
- Tip the unit laterally to gain access to the wheel to be removed.
- Unscrew the four (4) screws fixing the wheel to the chassis and remove the wheel.

Assembly procedure

Front Lifting Handles

The lifting handles are stuck to the chassis: it is necessary to break them to remove them.

Tools

Tool	Dimension
Allen screwdriver	6 mm
Philips head screwdriver	Medium tip
Straight head screwdriver	Medium tip
Glue	-



1⁄4 h

References

Part	Reference
61XX right lifting handle	8107691000
61XX left lifting handle	8107692000

Removal procedure

- Remove both the lateral cover and the bumper covering the lifting handle.
- Remove the front bumper.
- Using the straight head screwdriver as lever unglue the handle from the chassis.



• Clean the metallic surface from any plastic residual.

Assembly procedure

- Spread the glue inside the handle.
- Place the handle on the chassis so that the internal handle tongue match the chassis shape.

Rear Lifting Handle

Tools

Tool	Dimension
Box wrench	10 mm
Philips head screwdriver	Large and Small tip

1⁄4 h

References

Part	Reference
61XX rear lifting handle	8107649000

Removal procedure

- Remove the rear bumper.
- Disconnect all the cables from the unit plugs.
- Unscrew the five (5) Philips head screws that fix the plugs chassis to the main chassis.



- Extract the plug chassis.
- Unscrew the four (4) wrenches placed inside the insulation transformer box.
- Remove the rear lifting handle.

Assembly procedure

Keyboard Section

This section describes the procedures to access all the covers of the Keyboard section. The procedures refer to the unit in its open position with the wheels locked.

Unit Back Side

Unit Front Side

System Open Position



Encoder and Function Buttons

Tools

No tool is required.



1⁄4 h

References

Part	6100 Reference	6150 Reference
Small Encoder	8107470010	8107470020
Large Encoder	8107469010	8107469000
Mark Button	8107471001	8107471501
Tools Button	8107471002	8107471502
Power Button	8107471003	8107471503
Doppler Button	8107471004	8107471514
Steer/Angle Button	8107471012	8107471512
Color Button	8107471013	8107471513
Prf/Baseline Button	8107471007	8107471507
Freq/Tei Button	8107471008	8107471508
B/M Button	8107471009	8107471509
Depth/Zoom Button	8107471010	8107471510
Soft Key Button	8107471011	8107471511

Removal procedure

• The encoders are tongued to the key board. Seize the encoder to be removed and pick it up. The button is free once removed the encoder.

Assembly procedure

Carry out the inverse of the removal procedure.

Front Handle

Tools

Tool	Dimension
Allen screwdriver	4 mm

¹∕₄ h

References

Part	Reference
6100 front handle cover	8107851010
6150 front handle cover	8107851000

Removal procedure

• Unscrews the three (3) screws fixing the handle to the keyboard chassis. The screws are placed on the lower side of the handle.



- Release the screws that fix the Keyboard group (see next paragraphs for further details).
- Slightly tilt the key board group up and extract the front handle.

Assembly procedure

Carry out the inverse of the removal procedure.

Once removed the front handle, you get access to the **Keyboard group**.

Gel Holder

Tools





1⁄4 h

References

Part	Reference
61XX gel holder	8107913000

Removal procedure

The gel holder is not fixed. Remove it by pulling it up.

Assembly procedure

Carry out the inverse of the removal procedure.

Probe Holder

Tools

1/4 h

(R	
(10 ¹¹	12	
	Ì	

ToolDimensionPhillips electricMedium tipscrewdriver

References

Part	Reference
6100 probe holder	9102619110
6150 probe holder	9102619100

Removal procedure

• Unscrews the one (1) screw fixing the probe holder to the probe support. The screw is placed on the lower side of the support.

Assembly procedure

Cable Hook

Tools

1⁄4 h

Tool	Dimension
Phillips electric	Medium tip
screwdriver	

References

 Part	Reference
61XX cable hook	8107368000

Removal procedure

• Unscrews the one (1) screw fixing the hook to the probe support. The screw is placed on the lower side of the support.

Assembly procedure

Carry out the inverse of the removal procedure.

ECG Cable Holder

Tools

1⁄4 h

Tool	Dimension
Phillips electric	Medium tip
screwdriver	_

References

Part	Reference
61XX ECG cable holder	9102623000

Removal procedure

• Unscrews the two (2) screws fixing the hook to the probe support. The screws are placed on the lower side of the support.

Assembly procedure

Left Probe Support

Tools

1/4 h

Tool	Dimension
Allen screwdriver	4 mm



References

Part	Reference
6100 left probe support	9103233000
7350-6150 left probe support	9102969000

Removal procedure

- Remove the ECG cable holder
- Remove the two (2) probe holders and cable hooks.
- Unscrews the three (3) Allen screws fixing the support to the keyboard chassis. The screws are placed on the lower side of the support.

Assembly procedure

Carry out the inverse of the removal procedure.

Spare code

The left probe support spare code includes the Pedof probe holder.

Right Probe Support

Tools

Tool	Dimension	
Allen screwdriver	4 mm	

1⁄4 h

References

Part	Reference
6100 right probe support	8107852010
6150 right probe support	8107852000

Removal procedure

- Remove the Gel holder by pulling it up.
- Remove the three (3) probe holders and cable hooks.
- Unscrews the three (3) Allen screws fixing the support to the keyboard chassis. The screws are placed on the lower side of the chassis.

Assembly procedure
Keyboard Group

Tools

Tool	Dimension
Allen screwdriver	3 mm



1⁄4 h

Removal procedure

• <u>Remove the front handle.</u>



- Unscrews the nine (9) Allen screws fixing the group to the keyboard chassis. The screws are placed on the lower side of the chassis (screws position is indicated by the arrows in the above shot).
- Move the Keyboard group frontwards and then upwards.
- Disconnect the two (2) flat cables that connect the Keyboard group to the chassis.
- Remove the group.

Assembly procedure

Carry out the inverse of the removal procedure.

Once removed the front handle, you get access to the **trackball**, the **Key TGC** board, the **Key Switch** board, **PC keyboard**, the **mouse keys** and the **keyboard membranes**.

Display Section

CRT Monitor

Tools

Tool	Dimension
Straight head screwdriver	Medium tip



1⁄4 h

Removal procedure

- Place the monitor horizontally.
- Disconnect the power and video signal cables from the monitor.
- Unscrew the two (2) screws fixing the monitor to the chassis. The screws are placed at the base of the monitor rear side.
- Push the monitor backward and raise it up being careful to monitor weight.

Assembly procedure

Carry out the inverse of the removal procedure.

LCD Monitor (anterior and rear covers)

Tools

Tool	Dimension
Philips Screwdriver	Small and Medium tip
Allen Screwdriver	3 mm



1⁄4 h

References

Part	Reference
Anterior 19" LCD cover	9103170000
Rear 19" LCD cover	9103171000

Removal procedure

- Disconnect the power and video signal cables from the LCD monitor.
- Unscrew the four (4) Philips head screws fixing the LCD monitor to the arm.



- Remove the monitor by lifting it vertically.
- Unscrew the four (4) Philips head screws fixing the LCD monitor plastic covers to the arm.



• Remove the plastic covers.

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Assembly procedure

Carry out the inverse of the removal procedure.

The following pictures show how to connect the power and video signal cables to the LCD monitor.



Spare codes

The spare anterior cover includes the front label. The spare posterior cover includes the LCD identification label, with the SN and Year of production fields in blank.

ΝΟΤΕ

The LCD data must be copied on the label using an indelible pen, in order to preserve system traceability.

Fixed monitor arm

Tools

Tool	Dimension
Philips Screwdriver	Small and Medium tip
Allen Screwdriver	3 mm

1⁄2 h

Removal procedure

- Remove the monitor.
- Unscrew the two (2) Philips head screws fixing the plastic support basis (A and B screws in the photo) and remove the basis



• Unscrew the C Philips head screw to remove the plastic support covers.

CAUTION

Be careful to the screw: if it falls down, it can go into the unit chassis. It is strongly recommend to close the hole using a piece of paper or a piece of material.



• Unscrew the four (4) Allen head screws fixing the LCD to the chassis. Hold the LCD during this operation to avoid its falling down.



• Unscrew five (5) Philips head screws fixing the metallic stirrup to the LCD and remove the metallic stirrup.



Assembly procedure

Articulated monitor arm

Tools

Tool	Dimension
Philips Screwdriver	Small and Medium tip
Allen Screwdriver	3 mm

1⁄2 h

Removal procedure

- Remove the monitor.
- Open the articulated monitor arm by pulling the cover up and disconnect the power cable.



• Unscrew the three (3) Allen screws fixing the arm to the chassis. Hold the arm during this operation to avoid its falling down.



• Disconnect the video signal cable and remove the arm.

Assembly procedure

Softkey Section

Display Group Rear Cover

Tools

1⁄4 h



References		
	Part	Reference
	61XX softkey rear cover	8107556000



Removal procedure

- If necessary, place the monitor horizontally.
- Unscrew the two (2) Allen screws place in the upper part of the cover.



- Unscrew the three (3) screws placed on the lower part of the cover. The screws positions are indicated in the above photo. Rotate the keyboard to unscrew the "B" screw.
- Pull the cover out.

Assembly procedure

Carry out the inverse of the removal procedure, being careful to correctly position the CRT monitor cables (as shown in the below photo) if present.



Display Group Upper Cover

Tools

Dimension
Medium tip
5 and 2 mm

1⁄4 h

References

Part	Reference
61XX softkey upper cover	8107715000

Removal procedure

- Remove the CRT or LCD monitor (with the arm).
- Remove the Display Group rear cover.
- In case of CRT monitor, unscrew the three (3) Allen screws shown in the below shot and remove the monitor support.

CAUTION

Be careful to the screws: if they fall down, they can go into the unit chassis. It is strongly recommend to close the hole using a piece of paper or a piece of material.



• Remove the cover.

Assembly procedure

Carry out the inverse of the removal procedure.

Once removed the Display Group upper cover, you get access to **loudspeakers** and the **Softkey group**.

Chapter

2 - How to remove/reassemble the61XX boards and othersubassemblies

This chapter describes how to remove/re-assemble:

- the 61XX boards
- the programmed Hard Disk
- the PC fan
- the SPS and boards fans
- the CD/DVD drive
- the trackball
- the PC keyboard
- the keyboard cover
- the keyboard membranes and mouse keys
- the loudspeakers
- the softkey group

For accessing to these subassemblies covers have to be removed: refer to the previous chapter for detailed instructions.

Boards inserter

In order to make easy the insertion of the electronic boards in the right part of the chassis a new tool has been introduced: the board inserter code 9102954000. The picture shows the tool.

Are necessary two of them to insert the boards inside the unit.



To use the inserter:

- Insert the board inside the right slot taking care to fit partially the connector on the motherboard. Take care to leave the metallic fixing levers down before inserting the boards.
- Insert the tool in the upper and lower guides as shown in the pictures with the plastic part of the tool touching the plastic levers of the board.





- Push both levers in the direction of the machine in order insert the board.
- Remove the tools and close all the metallic fixing pins.

Chassis Section

Boards position

Most boards are placed inside the right side of the chassis. The left side of the chassis contains the PC Assembly, the Connectors and the Printer ECG boards. The Mother board is affixed to the board's chassis.

Right Chassis boards

In the right side of the chassis the following boards are installed:

Boards	6100 REF	6150 REF
ICS	9501087000	9501087100
ITR	9501089000	9501090000
ICC	9501091000	9501091000
IMC	9501092000	9501092000
DIP	9501093000	9501093000
DCP	9501094000	9501094000
DEP	9501095000	9501095000
BSC	9501097000	9501097000
BLC	9501099000	9501099000
SPS	9501100000	9501100000
SPR	9501101000	9501102000

In the right chassis are also located the SPS and boards fans.

With the exception of the ICS and the SPS boards, all other boards are simply installed in the chassis. Specific instructions are given for the ICS and the SPS boards; for all other boards refer to the below procedure.

Tools

Tools	Dimension
Straight head screwdriver	Large tip



1⁄4 h

Removal procedure

- Remove right cover and bumper.
- Unscrew the four (4) screws fixing the right shield to the chassis
- Free the board opening the two locking tabs.

The beside spot shows the tabs that block the boards. One tab is opened and the other two are in their close position.



• Extract each board from the chassis, using the two black pull tabs.

The following table shows the position of every board of the unit on the main bus:

ICS ITR 1 ITR 2 ITR 2 ITR 4 ITR 4 ITR 4 ITR 4 ITR 7 ITR 7 ITR 10 ITR 10 ITR 10 ITR 10 ITR 10 ITR 10 ITR 11 ITR 11 ITR 11 ITR 10 ITR 2 ITR	SPS
---	-----

Assembly procedure

Carry out the inverse of the removal procedure. Press the board firmly until it is possible to close both the pull tabs and the locking tabs.

ΝΟΤΕ

To facilitate boards insertion, it is useful to remove the closest metallic shields to gain better access to the boards.

ΝΟΤΕ

Be careful to properly oriented the **SPR** board when installing it. The board has to be inserted with its labels bar right-oriented .

ICS board

Tools

Tools	Dimension
Straight head screwdriver	Large tip
Phillips electric	Medium tip
screwdriver	_

1⁄4 h

Removal procedure

- Remove right cover and bumper.
- Remove the front cover and bumper.
- Unscrew the four (4) screws fixing the right shield to the chassis.
- Unscrew the four (4) Philips head screws fixing the lateral metal stirrup to the chassis.



- Unscrew the ten (10) Philips head screws (placed in the unit front side) fixing the **ICS** board to the chassis.
- Free the board by opening the two tabs and then pull outwards using the two black pull tabs.

Assembly procedure



SPS board

Tools

Tools	Dimension
Straight head screwdriver	Large tip
Philips head screwdriver	Medium tip

1/4 h

Removal procedure



The line voltage supplies the SPS board, so it's not possible to operate on it with the system on. All the operations have to be performed with the unit off. It's also necessary to wait few minutes, in order to permit to the internal capacitor to lose the charge and to avoid electrical shocks.

WARNING

After the replacement of this part will be necessary to perform all the Safety Tests according the procedure described in Section6 - Chapter 2.

Disconnect the cable (placed in unit rear panel) from the SPS • connector.



Connector

Remove right cover and bumper. •

- Unscrew the four (4) screws fixing the right shield to the chassis. •
- Free the SPS shield by opening the two metallic tabs and pull it. •
- Remove the shield. •
- Unscrew the two (2) Philips head screws that fix the SPS board to the • chassis. The screws are placed beside the SPS connector.
- Free the board by opening the two tabs and then pull outwards using • the two black pull-tabs.

Assembly procedure

Carry out the inverse of the removal procedure.

Be careful to properly oriented the SPS board when installing it. The board has to be inserted with its labels bar right-oriented.

Lower fan group

Tools

1/4 h

Tools	Dimension
Straight head screwdriver	Large and medium tip
Philips head screwdriver	Medium tip
Short Philips screwdriver	Small tip
Grab	-

NOTE

References

Part	Reference
6100 Lower fan group	9102581000
6150 Lower fan group	9102581500

Removal procedure

- Remove the right cover and bumper. •
- For 6150 only, unscrew the four (4) screws fixing the right shield to the chassis.
- Unscrew the two (2) screws fixing the lower fan group to the chassis. •





6150

6100

• Extract the lower fan group from the chassis sliding it and keeping attention to the supply cable.



• Disconnect the cable and remove the group.

Assembly procedure

Carry out the inverse of the removal procedure.

Left Chassis Boards

In the left side of the chassis is located the PC group, the CD/DVD drive, the programmed Hard Disk and the PC fan.

The PC group is composed by the following board: PC motherboard, AKCP, VCP, video board (external board not integrated on the PC motherboard), PVA, Frame grabber, PLC and PSE (with ECG inside).

CD/DVD Drive

Tools

Tools	Dimension
Straight head screwdriver	Large tip
Philips electric	Medium tip
screwdriver	



1⁄4 h

References

Part		Reference	
	CD drive	9730650037	
	DVD burner	9730650085	

Removal procedure

- Remove left cover and bumper.
- Unscrew the four (4) screws fixing the left shield to the chassis.

- Remove the front cover.
- Unscrew the four (4) screws fixing the left board shield to the chassis.
- Disconnect the cables from the device.
- Unscrew the four (4) Philips head screws fixing the device metallic support to the chassis.
- Remove the device support.
- Unscrew the eight (8) Philips head screws that fix the device to its support.
- Remove the device.

Assembly procedure

Carry out the inverse of the removal procedure being careful to place the cables behind the PC chassis so that they are not overlaid the fan.

PC Chassis

Tools

Tools	Dimension
Straight head screwdriver	Large tip
Phillips electric screwdriver	Medium tip



1⁄4 h

PC Chassis



References

Part	Reference
6150 PC UNIT	9102572000
6100 PC UNIT	9102572100
61XX PC UNIT + X-View	9102572510
61XX PC UNIT + Virtual Navigator	9102572600
61XX PC + Virtual Navigator + X-View	9103234000

Removal procedure

- Remove left cover and bumper.
- Unscrew the four (4) screws fixing the left shield to the chassis.
- Disconnect all the external cables from the rear panel connectors.
- Disconnect the internal flat cables from the PSE, PLC and PVA boards.
- Disconnect the audio cable.
- Disconnect all the cables coming from the CD/DVD drive, the fan and the chassis.
- Unscrew the ten (10) Philips head screws (placed on the rear panel) that fix the PC Chassis to the main one.
- Unscrew the two (2) internal screws which fix the metallic chassis of the PC to the unit.
- Tilt the PC Chassis and remove it.

Assembly procedure

Carry out the inverse of the removal procedure, being careful to keep all cables far from the fan.

PSE board

Tools		
	Tools	Dimension
	Straight head screwdriver	Large tip
	Socket wrench	14 mm
	Box wrench	5 mm
1 / 1		
1⁄4 h		
References		
	Part	Referenc
	61XX PSE	950110900

Removal procedure

WARNING

After the replacement of this part will be necessary to perform all the Safety Tests according the procedure described in Section6 – Chapter 2.

- Remove left cover and bumper.
- Unscrew the four (4) screws fixing the left shield to the chassis.
- If necessary, disconnect all the external ECG cables.
- Unscrew the one (1) screw fixing the metallic block and remove it.



- Disconnect all the cables connected to the PSE board, the flat connected to the PVA and PLC and the audio cable to the PC motherboard.
- Unscrew the two (2) screws that fix the board to the PC Chassis and remove the board.

Assembly procedure

Boards in the PC

Tools	Dimension	
Straight head screwdriver	Large tip	
Socket wrench	14 mm	
Box wrench	5 mm	



References

Reference
9501109000
9501110000
9501105000
9103055000
9730630069

Removal procedure

- Remove left cover and bumper.
- Unscrew the four (4) screws fixing the left shield to the chassis.
- If necessary, disconnect all the external ECG cables.
- Unscrew the one (1) screw fixing the metallic block and remove it.



- Disconnect all the cables connected to the PSE board, the flat connected to the PVA and PLC and the audio cable to the PC motherboard.
- Unscrew the two (2) screws that fix the board to the PC Chassis and remove the board.

Assembly procedure

Programmed Hard Disk

Tools

Tools	Dimension
Straight head screwdriver	Large tip
Phillips electric	Medium tip
screwdriver	
Box wrench	5 mm



1⁄4 h

References

 Part	Reference
61XX HDD	9730650091

Removal procedure

- Remove left cover and bumper.
- Unscrew the four (4) screws fixing the left shield to the chassis.
- Disconnect the cables connected to the device (supply and serial-ata cables).
- Unscrew the four (4) Philips head screws that fix the support of the Hard Disk to the PC and remove it.
- Unscrew the Hard Disk from its metallic support.

Assembly procedure

PC Fan

Tools

Tools	Dimension
Straight head screwdriver	Large and medium tip
Philips head screwdriver	Medium tip
Grab	*

1⁄4 h

References

Part	Reference
61XX PC fan	9102821000

Removal procedure

- Remove left cover and bumper.
- Unscrew the four (4) screws fixing the left shield to the chassis.
- Disconnect the cable which supply the fan.



- Unscrew the four (4) screws fixing the metallic holder to the chassis.
- Remove the fan.

Assembly procedure

Carry out the inverse of the removal procedure. The grab can be used to facilitate the insertion of the elastic clamps.

Keyboard Section

The Key Switch and Keyboard Control boards are in the Keyboard Section together with the trackball, the PC keyboard, the mouse keys, the membranes, their supports and the keyboard cover.

Trackball

Tools

Tools	Dimension
Allen screwdriver	3 mm
Phillips electric	Medium and Small tip
screwdriver	
Straight head screwdriver	Small tip



1⁄4 h

References

Part	Reference
6100 Trackball	340000052
6150 Trackball	340000053

Removal procedure

- Remove the Keyboard group.
- Using the straight head screwdriver disconnect the trackball cables.
- Unscrew the four (4) Philips head screws fixing the trackball support to the keyboard group.
- Remove the trackball support.
- Unscrew the three (3) flathead screws fixing the trackball to its support.

Assembly procedure

Key Switch board and Key Switch Membranes and Supports

Tools

Tools	Dimension
Allen screwdriver	3 mm
Phillips electric	Medium and Small tip
screwdriver	
Straight head screwdriver	Small tip

1⁄2 h

References

Part	Reference
61XX Key Switch board	9501107000
6100 A Membrane	8107458000
6100 B Membrane	8107459000
6100 A Membrane Support	8107464000
6100 B Membrane Support	8107465000
6150 A Membrane	8107458500
6150 B Membrane	8107459500
6150 A Membrane Support	8107464500
6150 B Membrane Support	8107465500

Removal procedure

- Remove the Keyboard group.
- Remove the ten (10) encoders from the key board by pulling them up.
- Remove the trackball.
- Disconnect the two (2) flat cables from Key Switch board.
- Unscrew the thirty-three (33) Philips head screws fixing the board to the group.
- Remove the two membrane supports by pulling them up.
- Remove the two keys membranes by lifting them up.

Assembly procedure

Carry out the inverse of the removal procedure.

Once removed the Key Switch board you gain access to the mouse keys, that are free.

Key Control board and Shut Down Membrane

Tools

Tools	Dimension
Allen screwdriver	3 mm
Phillips electric	Medium and Small tip
screwdriver	



 $^{1}/_{2}h$

References

Part	Reference
61XX Key Control board	9501106000
61XX Shut Down Membrane	8107460000

Removal procedure

- Remove the Keyboard group.
- Remove the seven (7) TGC caps.
- Disconnect the two (2) flat cables from Key TGC board.
- Unscrew the thirteen (13) Philips head screws fixing the board to the group.
- Remove the shut down membrane by lifting it up.

Assembly procedure

Carry out the inverse of the removal procedure.

Once removed the Key TGC board you gain access to the PC keyboard and to the TGC potentiometers.

PC Keyboard

Tools

Tools	Dimension
Allen screwdriver	3 mm
Phillips electric	Medium and Small tip
screwdriver	_

1⁄2 h

References

Part	Reference
61XX PC Keyboard	9103235000
61XX Key Control board	9501106000
61XX Shut Down Membrane	8107460000

Removal procedure

- Remove the Keyboard group.
- Remove the Key Control board.
- Disconnect the flat cable from the Key Control board.
- Remove the PC keyboard by pulling it up.

Assembly procedure

Carry out the inverse of the removal procedure.

Keyboard Cover

Tools

Tools	Dimension
Allen screwdriver	3 mm
Phillips electric	Medium and Small tip
screwdriver	
Straight head screwdriver	Small tip

1⁄2 h

References

Part	Reference
61XX keyboard cover	8107473500

Removal procedure

- Remove the Keyboard group.
- Remove the trackball.
- Remove the Key Control and Key Switch boards.

Assembly procedure

Carry out the inverse of the removal procedure.

Spare Part

The spare part includes both the plastic and silver covers and the logo labels.

Softkey Section

The Keyboard Display and the Loudspeakers are in the Softkey section.

Keyboard Display

Tools

Tools	Dimension
Allen screwdriver	2 and 5 mm
Phillips electric	Large, medium and
screwdriver	small tips



References

 $\frac{1}{2}h$

Part	Reference
6100 Keyboard Display	9501108000
6150 Keyboard Display	9501211000

Removal procedure

- Remove the Monitor
- Remove the Softkey cover.
- Remove all the cables connected to the display group.
- Unscrew the six (6) Philips head screws fixing the display group to the metallic chassis. Removing the mentioned screws the display is free, so it's necessary to keep attention do not fall down the part.

Assembly procedure

Loudspeaker

Tools

Tools	Dimension
Allen screwdriver	2 and 5 mm
Phillips electric	Large, medium and
screwdriver	small tips

1⁄2 h

References

Part	Reference
61XX loudspeaker	9102783000

Removal procedure

- Remove the Monitor
- Remove the Softkey rear and upper covers.
- Disconnect the audio cable from the display group.
- Unscrews the four (4) Philips head screws fixing each loudspeaker to the metallic chassis.

Assembly procedure

Appendix

Appendix A - Parts Accessing Times

This evaluation refers to the 61XX only: the system is considered free from all the peripherals and probes.

Note: the accessing time has been qualified by multiples of 15 minutes

Accessing times have been get using the tools set detailed in Chapter 2, Section1.

Covers		
Part	Parts to be removed	Time
Right cover	-	1⁄4 h
Left cover	-	1⁄4 h
Right bumper	-	1⁄4 h
Left bumper	-	1⁄4 h
Rear cover	-	1⁄4 h
Rear bumper	-	1⁄4 h
Upper metallic covers	-	1⁄4 h
Upper metallic small cover	Upper metallic covers + n.2 screws	1⁄4 h
Upper plastic cover	Upper metallic covers, Upper metallic small cover + n.11 screws	1⁄4 h
Front cover	Left and Right covers, Upper metallic covers, Upper metallic small cover + n.6 screws	1⁄4 h
Front bumper	Left and Right covers, Upper metallic covers, Upper metallic small cover, Front cover + n.4 screws	1/4 h
Posterior wheel cover	-	1⁄4 h
Posterior wheel	Posterior wheel cover	1⁄4 h
Anterior wheel	-	1⁄4 h
Front lifting handle	Left and Right covers, Left and Right bumpers	1⁄4 h
Rear lifting handle	Rear bumper, Plugs chassis + n.4 screws	1⁄4 h

Accessing Times to the Chassis section

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Boarus		
Part	Parts to be removed	Time
ICS	Right cover, Right bumper, Right shield,	1⁄4 h
	Stirrup + n.18 screws	
ITR board	Right cover, Right bumper and Right shield	1⁄4 h
ICC board	Right cover, Right bumper and Right shield	1⁄4 h
IMC board	Right cover, Right bumper and Right shield	1⁄4 h
DIP board	Right cover, Right bumper and Right shield	1⁄4 h
DCP board	Right cover, Right bumper and Right shield	1⁄4 h
DEP board	Right cover, Right bumper and Right shield	1⁄4 h
BSC board	Right cover, Right bumper and Right shield	1⁄4 h
BLC board	Right cover, Right bumper and Right shield	1⁄4 h
SPR board	Right cover, Right bumper and Right shield	1⁄4 h
SPS board	Right cover, Right bumper, Right shield, SPS	1⁄4 h
	shield $+ n.2$ screws	
PSE board	Left cover, Left bumper, Left shield $+ n.3$	1⁄4 h
	screws	

Boards

Other subassemblies

Part	Parts to be removed	Time
Lower fan group	Right cover, Right bumper, (Right shield) +	1⁄4 h
PC fan	Left cover, Left bumper, Left shield + n.4	1⁄4 h
CD drive and DVD Burner	screws Left cover, Left bumper, Left shield + n.6	1⁄4 h
Programmed Hard Disk	screws Left cover, Left bumper, Left shield + n.4	1⁄4 h
	screws	

Covers		
Part	Parts to be removed	Time
Encoder	-	1⁄4 h
Function button	-	1⁄4 h
Front handle	n.3 screws	1⁄4 h
Probe holder	n.1 screw	1⁄4 h
Gel holder	-	1⁄4 h
Cable hook	n.1 screw	1⁄4 h
ECG cable holder	n.2 screws	1⁄4 h
Left probe support	ECG cable holder, Probe holders, Cable	1⁄4 h
	hooks $+ n.3$ screws	
Right probe support	Gel holder, Probe holders, Cable hooks + n.3	1⁄4 h
	screws	
Keyboard cover	Front handle, Trackball, Key Switch board,	1⁄2 h
	Key Control board + n.62 screws	

Accessing Times to the Keyboard section

Boards		
Part	Parts to be removed	Time
Key Switch board	Front handle, Trackball, Membranes + n.51	1⁄2 h
	screws	
Key Control board	Front handle, PC keyboard, Membrane +	1⁄2 h
	n.13 screws	

Other subassemblies

Part	Parts to be removed	Time
Trackball	Front handle + n.7 screws	1⁄4 h
Key Control membrane	Front handle, Trackball + n.22 screws	1⁄2 h
Key Switch membranes	Front handle, Trackball + n.45 screws	1⁄2 h
PC Keyboard	Front handle, Key Control board	1⁄2 h

Accessing Time to the Monitor

Covers

Part	Parts to be removed	Time
CRT	CRT + n.2 screws	1⁄4 h
LCD Anterior and Rear covers	LCD + n.8 screws	1⁄4 h
LCD Fixed monitor arm	LCD + n.12 screws	1⁄2 h
LCD Articulated monitor arm	LCD + n.3 screws	1/2 h

Accessing Times to the Softkey section

Covers		
Part	Parts to be removed	Time
Display Group rear cover	n.5 screws	1⁄4 h
Display Group upper cover	Monitor, Softkey rear cover + n.3 screws	1⁄4 h

Boards

Part	Parts to be removed	Time
Keyboard display	Softkey rear cover, Softkey upper cover, Monitor + n.6 screws	1⁄2 h

Other subassemblies

Part	Parts to be removed	Time
Loudspeaker	Softkey rear cover, Softkey upper cover + n.6	1⁄2 h
	screws	
Chapter

1 - 61XX Block Diagrams

This chapter contains the block diagram descriptions for each board. The general Block Diagram shows the relationships of each board having a unique function within the overall unit.

In the block diagrams, the functions are gathered to permit an easy comprehension of the block functioning, which indicates the correlative electronic boards.

In Figure 1 there is the block diagram of the 6100 unit.

In Figure 2 there is the block diagram of the 6150 unit.

The differences between 6100 and 6150 are:

- different ICS (with only 3 connectors for electronic probes)
- different type of ITR board (but they work in the same logical way)
- DEP board is optional. When the DEP is not present the US signal arrives directly to the BSC (sent from the DCP).
- different SPR (it sends out different voltages)
- the PC group code 9102572100 is optional (it makes a module with the DEP)

At the start-up the PC and the boards starts in parallel: the PC will start the Win XP sw and the unit will start the test and program of the various boards.

As soon as the unit starts, the BLC and the IMC start to check the boards present, the HW version and if there are errors.

The BLC make this operation on the back end (DIP, DCP, BSC, DEP) and on the IMC.

After this operation from the BLC, the IMC will program the ITRs, the ICC and the ICS.

When all the operations are completed the probe selection menu will appear on the screen and the unit will start to work. The ICS is the board where are connected all the probes; on board there are four zif connectors and one round connector for pencils. The ICS receives the transmission data (bangs) for the probes from the ITR and control signals and settings from the IMC.

In the ICS doesn't arrive the high voltage to generate the bangs, this operation is performed on the ITR in parallel, so the ITRs send to the ICS already the high voltage signals.

The ICS doesn't perform any elaboration on the bangs or on the data received from the probes, but simply it sends the US data from the probes directly to the ITR.

The ICS sends the information about the probe connected to the IMC.

The ITR are twelve boards working each one in a little portion of the image (little vertical areas not consecutive).

They generate the bangs (they receive the high voltage from the power supply) according the settings and the probes connected.

The US data from the ICS are managed in the same way (every board manages little vertical areas not consecutive).

On the ITR the data are filtered, transformed from analog to digital and the focalization is performed. The data are also amplified according the gain selected by the user.

The IMC controls all the operations performed on the ITR and on the ICS.

It sends to the mentioned boards all the necessary data (focalization data, gain, timing to acquire images and to generate the bangs).

It receives the information about the probe connected and sends it to the PC (in order to show it on the screen).

The US data from the ITR arrives to the DIP. This one performs other filtering and different elaborations for the US modalities BW, CFM and PW Doppler.

From the board exits the BW data directed to the BSC and the I and Q components (in phase and quadrature for the CFM and PW) directed to the DCP

In case of particular post processing elaborations of the image, from the DIP the BW data arrives to the DCP and, from this board (without any other elaboration), arrive to the DEP.

The DEP performs only post processing elaborations for the BW signal, according some particular formula.

The data elaborated are sent to the BSC. When the DEP works, the direct communication DIP-BSC is not active, vice-versa when the post-processing is not working, the DEP is not involved in the management of the BW image.

The CW Doppler for the electronic probes is managed by the ITRs, which generate the bangs and send them to the ICS.

The CW signal received from the probe returns to the ITRs and then to the ICC (clock and CW generator), where it's processed (filtering, gain...) and where are generated the two components I and Q (in phase and quadrature). The I and Q data (analog signal) are sent to the DCP.

For the Pencils, the bang is directly generated by the ICC which sends the signal to the ICS.

The data from the Pencil probe returns to the ICC, where it's processed in the same way of the electronic probes.

The IMC controls all the processing also for the CW and send all the right settings to the ICC (gain, filters...).

The ICC generates also all the clocks necessary to the unit.

The BSC is the scan converter and the CINE memory.

It receives the BW data from the DIP or from the DEP and stores them in internal memories, ready to be sent for the next steps.

Also it receives the ECG signal (from the PSE) and mixes it to the BW image. It controls also the ECG acquisition.

The DCP receives the I and Q signals and generates the CFM image or the Doppler trace according the mode selected and the setup of the user.

After the elaboration the data are sent to the BSC for the scan converter

For the CW Doppler, the signal before is converted from analog to digital, then processed as for the PW.

The audio trace for the Doppler is directly sent to the PVA board (inside the PC group) where it will be managed.

The BSC receives also the CFM and Doppler data (both PW and CW) and mixes them to the BW image (B and M) from the DIP and with the ECG trace (in case it's present).

Also for the CFM and Doppler the cine memory is inside the BSC.

The US video image, which is produced by the BSC, is sent to the BLC

In this board the US data receives post-processing elaborations (palette BW, CFM...) and then are sent to the PVA (board inside the PC group).

The PVA will mixes the overlay (from the VGA board of the PC) with the US data from the BLC and send the result to the monitor.

It also receives the audio signal from the SoundBlaster, in the board is amplified and then is sent to the speakers.

The PC motherboard receives the command from the keyboard group, it transfers them to the PLC which sends all the commands to the BLC and from this unit to the rest of the system.

The Figure 3 is the block diagram of the PC group.

The Figure 4 is the block diagram of the PC group with Virtual Navigator.

The mentioned parts compose the power supply group:

the main power switch group, where there is the main switch of the unit, the insulation transformer and the unit fuses.

On this group there are the auxiliary plugs for the external peripherals and the monitor.

From this group the AC voltage (220V or 115) arrives to the SPS board where the AC line voltage is transformed in a 15 Vdc.

From this voltage (inside the SPR and PSE) will be generated all the other voltages of the unit.

The SPS also generates the supply voltage for the fans (variable from 7 to 15 Vdc according the temperature).

This 15 Vdc is sent to the SPR and PSE.

The SPR is the board responsible to generate all the voltages necessary for the unit: +5Vdc, +3.3Vdc, +6Vdc, +12Vdc, the high voltage for the bangs....

They are sent to the various boards.

The PSE (which is positioned inside the PC group) receives the 15Vdc and generates the necessary voltages for the PC, the HDD, the keyboard group and the Display group.

Also on this board there is the ECG part of the unit.

On the PSE there is the ECG plug to connect the ECG cable to the patient, the data from the PSE arrives directly to the BSC.

The BLC and the IMC control the output voltages of the power supply group.

The Figure 5 is the block diagram of the power supply group.

The keyboard group is the interface between the user and the unit.

All the communications from/to the keyboard group are through the display group, which works as interface between the keyboard and the PC motherboard.

The display group has a display on board, where are visualized some parameters (different according every modality) selected and modified by some switches and encoders on board.



Figure 1.



Figure 2.



Figure 3.









BMB

The BMB board (Bus Mother Board) is the physical motherboard of the unit.

On it are present the connectors for the various boards.

No active components are present on the BMB.

The tracks where the data are exchanged among the various boards are directly wired in the bus.

ICS

The ICS (Input Connector Switch) is the interface among the probes and the rest of the unit.

On the 6100 ICS are assembled four connectors for electronic probes and 1 for pencil probes.

On the 6150 ICS are assembled three connectors for electronic probes and 1 for pencil probes.

The board doesn't perform any elaboration on the US data from the probes and on the bangs, but simply passes/receives them/from to the ITRs.

In fact the bangs are already received at the high voltage level from the ITR and are directly sent to the right connector.

On board there are some relays which send to the connector selected the bangs from the ITR.

The information about the probe connected is sent to the IMC.

ITR

The ITR (Input Tx-Rx) is the responsible about the bang generation and about the focalization of the signals from the probes.

In the unit there are twelve ITR boards. No difference among them: every board can be seated in every ITR position without trouble.

From the IMC the ITRs receive all the focalization data and, according the probe and the preset selected, they generate the high voltage bangs, starting from the low signal bang (also generated inside the ITRs).

To perform this operation, the SPR sends in parallel to all the ITRs the high voltage to generate the bangs.

When ready they are sent to the ICS and then to the probe.

Every ITR manages little vertical portion of the image, not consecutive.

The data from the probes directly returns to the ITRs. They are filtered and amplified according the gain selected, then converted from analog to digital.

The digital data is stored in a memory ready to be sent out for the next elaboration.

The ITRs doesn't send the data directly to the DCP for the next elaboration, but every board sends out the data to the next ITR.

So the ITR1 will send out the US data to the ITR2; there the board will add the signal of the ITR1 to the signal of the ITR 2 and will send all to the ITR3 and so on.

Only the ITR 12 will send all the signals to the DIP for the next elaborations.

For the CW Doppler for the electronic probes, the boards will create the bangs and will send them to the ICS.

In the same way as before, every board will manage a little portion of channels in transmission and reception.

The data arriving from the probe are amplified and sent to the ICC for the next elaborations (still as analog signal).

The ITRs for 6100 and 6150 work in the same way from the logical point of view, but the amplifier for the US wave are different between the two models. For this reason it's not possible to mix the boards among them and to use the ITRs for Mylab 70 in the MyLab Gold Platform and viceversa.

ICC

The ICC (Input CW-Clock) is the responsible for the management of the CW Doppler and for the creation of all the clocks of the unit.

Starting from a single oscillator, the unit generates all the necessary clocks.

The signal from the oscillator enters in one FPGA controlled from a flash memory and this FPGA generates all the clocks.

From the FPGA they are sent out to the various boards.

For the CW Doppler, the boards works in two different ways for Pencils or for electronic probes.

In case of pencils the board generates the bang which is sent directly to the ICS.

The CW signal arriving from the pencil is filtered, amplified (also according the gain selected from the user) and then sent out to the DCP for the next elaborations.

In case of electronic probes, the board receives the signal from the ITR.

This signal enters in a delay chain in order to be focalized, then it's filtered and amplified (as before, also according the gain selected from the user).

After these steps, the signal is sent out to the DCP as for the pencils.

DIP

The DIP (Digital Imaging Processor) is the responsible for the creation of the BW image and for the signal in phase and quadrature, necessary to generate the CFM and the PW Doppler.

The data arriving from the ITR are filtered, then the ultrasound data are divided in case of e BW image (2D and M-Mode) or CFM and PW and receive different elaborations.

The BW data are demodulated, filtered and elaborated (also according some parameters and filters set by the user) and then are sent directly to the BSC.

For the CFM and PW, starting from the data filtered, are generated the I and Q signals.

Also them receive different elaborations in case they are for CFM or for the PW Doppler and after all the elaborations are sent to the DCP.

For the management of all the functions on board, there are is one DSP with its SDRAM.

On it all the SW is stored at the start-up and every time it's necessary.

The DSP is in communication with some internal PLD and FPGA, which manage all the functions of the board and all the communication processes IN/OUT.

There is a dedicated communication channel between DIP and IMC, where the DIP receives all the necessary data to manage the US information arriving from the ITRs.

IMC

The IMC (Input Master Controller) manages different processes inside the unit:

- receives from the BLC all the necessary SW to program the front end (ICS, ITR and ICC)
- generates the sync and the timings necessary to acquire the US images
- controls the system gain and applies it during the various elaborations of the image
- checks the current necessary to generate the high voltage bang (high tension AT from SPR) and stops the unit in case of troubles
- checks the temperature for the TEE probes
- manages the communication of the ICS and receives all the information about the probe connected. After the data are sent to the PC group in order to set the correct parameters of the probe and to show on the monitor the probe in the probe selection menu.
- manages the probe switch according the probe selected by the user

At the start-up the board receives from the BLC all the SW necessary to set itself and the front end. Then the board start to check the presence of the boards ITR, ISC and ICC programs them. At the end the board informs the BLC that all has been performed.

The internal DSP generates all the sync and all the focalization data necessary to process the various bangs. Also the gain to apply to the image is controlled by this board.

The control of the current sent to the ITRs, to generate the bangs, is performed in order to control the power of the emission and to check for conditions of fault.

In case of current out of range, the board can reduce it automatically or can disable the high voltage in case of short circuit.

The IMC doesn't check any other voltage sent out from the power supply group. The BLC makes this operation.

For the TEE control there is a dedicated part of the board which controls the temperature and stops the system in case it reaches dangerous values.

For the control of the probe selection the IMC receives from the ICS the information about the probe connected.

When a probe had been selected it controls that the ICS enables the connector and that the bang are correctly sent from the ITR.

DCP

The DCP (Digital Color Processor) is the responsible about the creation of the CFM and Doppler trace (PW and CW).

From the DIP the board receives the I and Q components (for CFM and PW).

The mentioned data (digital) enter in a block of memory ready for the next elaborations.

The data are filtered and elaborated also with the post processing settings.

For the next elaborations of the CFM there are some DSPs, where the data are elaborated (vertical filtering, persistence, noise rejection...).

After al the elaborations the data arrive to one DSP, which will send all to the BSC.

For the PW the data from the memories arrive in one DSP which perform all the possible elaborations.

In this DSP the audio signal is generated.

The video data are sent to the another DSP and then out to the BSC.

The audio is directly sent to the PVA inside the PC group for the next elaborations.

The CW data from the ICC are first converted from analog to digital, then are elaborated as the PW.

The same thing for the audio which is managed by the same DSP and then sent, as before, to the PVA.

For all the communications between the board and the BLC there is a DSP.

This component manages all the process at the start-up.

It receives the programs from the BLC and answers all the requests. Also it manages all the internal processes according the settings selected.

DEP

The DEP (Digital Extended Processing) is a board dedicated for post processing elaborations on the BW image.

In case the particular filtering is selected, from the DIP board the BW signal arrives to the DCP (it's not received directly from the BSC).

The DCP simply passes the signal to the DEP, without any elaboration.

On the DEP the BW signal is elaborated by some DSPs according the filtering selected and then the result is sent to the BSC for the scan correlation.

Also the DEP is programmed by the BLC.

BSC

The BSC (Back-end Scan Converter) performs all the operations of scan converter of the unit.

From the DIP (or from the DEP) arrives the 2D and M; they are stored in the cine memory. The same is done for the CFM and Doppler data (both PW and CW).

This is to compensate possible delay in the transmission of the data due to the elaborations.

From the cine memory the data arrives in a memory where are mixed all the components, in order to create all the modalities (2D+CFM, M+CFM....).

After all the elaborations the video data is sent to the BLC.

For the ECG the data from the PSE arrives to the board where it's mixed with the other US signals.

In the board is also present the cine memory of the unit.

The Cine data are stored in internal dynamic memories, ready to be visualized.

BLC

The BLC (Back Link Control) is the interface between the PC group and the rest of the unit.

This board receives from the BSC the video data. They are stored in two video memories, one for the live condition and another for the storage of images and clips or for other processes as the 3D.

The live image is sent to the PVA board to be visualized on the screen of the unit.

At the start-up the BLC reads from one internal flash memory the HW composition of the system and checks that it's correct.

In case it's necessary it programs again the flash.

It programs directly all the boards of the back end (DIP, DCP, BSC, DEP) and the IMC (which will program the front end).

After, it communicates with the PC group by the PLC (board inside the PC group) and downloads all the SW necessary to boot the unit, or to set again the unit after a modification of the system's condition.

Also controls all the communications processes of the unit and check the power supply group in order to see if it provides the right voltages outside.

Inside the board there is a ROM device (ID button) where are stored all the passwords of the unit. In case of the replacement of the part it's necessary to replace also this device and insert it in the new board.

Power Supply Group

4 different boards compose the power supply group: Mains power, SPR, SPS and PSE.

MAINS POWER

The main input plug, the unit switch and the insulation transformer to supply the peripherals, compose this group.

The line voltage is connected to the main switch of the unit. The line voltage is sent to the SPS (where it will be transformed in DC voltage) and to the insulation transformer, which will supply the peripherals of the unit (monitor, printers, VTR...).

On this group there is the switch to select the line voltage between 220 or 115Vac.

Both the lines to the SPS and to the peripherals are protected by fuses.

WARNING

WARNING

After the replacement of this part will be necessary to perform all the Safety Tests according the procedure described in Section6 – Chapter 2.

SPS

The SPS (Switch power supply) receives the live voltage from the Mains Power group and generates one DC voltage of 15 V.

This 15Vdc is sent to the SPR and to the PSE; starting this voltage the SPR will create all the necessary DC voltages of the unit; the PSE all the necessary voltages for all the boards of the PC group, the keyboard and the display.

On the SPS it's generated also one variable DC voltage (in a range between 7 to 15 Vdc) which supplies the fans of the unit. This voltage increases its value with the internal temperature of the unit.

This board generates the +5V (DC) for the stand-by.

As soon as the mains switch is on, the SPS creates the +5 and sends it to the PSE.

From this board the voltage is sent to the PC motherboard and to the keyboard group (on/off key).

After the replacement of this part will be necessary to perform all the Safety Tests
according the procedure described in Section6 – Chapter 2.

SPR

The SPR (Switch Power Regulator) receives the 15Vdc from the SPS and generates all the necessary output voltages of the unit: +1.8Vdc, +3.3Vdc, +3.6Vdc, + 6Vdc, + 12Vdc, +5Vdc, AT (high tension for the bangs, DC voltage variable according the probe and the power of emission selected).

On boards there are some control blocks, which set automatically the AT voltage according the probe selected.

The board is controlled by the IMC (this part controls the current necessary for the AT by a check in the ITR) and the BLC, which check that all the voltages are in range and there aren't short circuits or high values of current absorbed.

The difference between 6100 and 6150 models is that in 6150 SPR generates also one negative high tension for the bangs (-AT) necessary to drive the ITRs. For this reason there's not compatibility between the boards of the two systems.

WARNING

After the replacement of this part will be necessary to perform all the Safety Tests according the procedure described in Section6 – Chapter 2.

PSE

The PSE (PC Supply ECG) is responsible about the creation of the line voltages necessary of the boards inside the PC group, for the keyboard group and for the display group.

This board is positioned inside the PC group (in the metallic chassis of the PC).

Starting from the 15Vdc of the SPS the board generates + 5Vdc, +3.3Vdc, + 12Vdc necessary for all the boards inside the PC group.

The board receives from the SPS the stand-by voltage for the boot and sends it to the PC motherboard and to the keyboard group (on/off key).

As soon as the key is pushed the PSE start to supply the PC and the unit starts.

The PSE supplies the keyboard group and the display group through the AKCP board.

On the PSE there is also the ECG. On board there is a connector for the patient cable.

The signal is amplified, filtered and converted from analog to digital.

After, through one optoinsulator (to insulate the ECG part from the rest of the unit for safety reasons), the ECG signal is sent to the BSC for the next elaborations.

WARNING

After the replacement of this part will be necessary to perform all the Safety Tests according the procedure described in Section6 – Chapter 2.

KEYBOARD GROUP

The keyboard group is composed by the Keyboard Control board, the alphanumeric keyboard, the trackball and the Keyboard Switch board.

This assembly manages all the communications between the user and the unit.

The on the KS are positioned all the function keys, the encoders (for Gain 2D, CFM....) and there is the connection for the trackball. Every command is sent to the KC (where are also positioned the TCG sliders) and where there is the controller of the keyboard group.

On this board is also connected the alphanumeric keyboard. By two flat cables, the KC is connected to the display group.

The keyboard group doesn't send directly all the data to the PC, but it passes through the display group.

The difference between 6100 and 6150 models is in the layout of the keys. The system is able to recognize by itself the type of unit and to set the various keys according the unit.

DISPLAY GROUP

This group is composed by the Keyboard Display board and from a display LCD (a color one for 6100, ten monochromatic for 6150).

The KD board is the interface between the keyboard group and the PC.

By two flat cables it receives all the keyboard commands (it communicates with the KC).

On board there are two PS2 connectors for the alphanumeric keyboard and for the trackball (used as mouse).

Both are wired to the PC motherboard. All the other commands are sent to the PC via USB (on this board there is a standard USB connector dedicated for this communication process).

From the PSE arrives all the supply for the display and for the keyboard group.

The Display group also drives the LCD display, which shows different menu according the system set-up and the user selection.

On board there are some encoders on the sides of the Display which changes the parameter indicated on the display.

On the KD arrives also the audio signal (already amplified) from PVA and then is sent to the speakers.

PC GROUP

The PC Group is composed by the following part:

PC motherboard, VGA board, Hard Disk, PVA, PLC, SoundBlaster, Video grabber, AKCP, VCP and PSE.

The PSE has been described inside the power supply group but physically it's located inside the PC box.

The 61XX with Virtual Navigator have two additional boards: PC Bird and VGA Grabber.

PC MOTHERBOARD and PC PERIPHERALS

Inside the unit there is a standard PC motherboard equipped with USB, LAN, PS2 connectors for keyboard and mouse, parallel, serial...

The processor is a 3.2 GB (or superior) and the HDD is a serial ATA 80GB (or superior).

From the display group there are two PS2 cables that connect the trackball (used as mouse) and the alphanumeric keyboard.

The motherboard controls the external peripherals 5"1/4 (DVD Drive, CD..).

Via USB arrives all the other commands from the keyboard; from the motherboard they are sent via PCI bus to the PLC and from this board to the rest of the unit.

The VGA board send out the video sync. and the overlay to the PVA.

In the HDD there is all the SW for the unit; at the start-up the PC reads it and via PCI send it to the PLC.

The PVA receives the audio Doppler signal from DCP.

The SoundBlaster receives the audio from the VTR and from the frontal microphone.

Using one external cable jack/jack it sends all the audio signal to the PVA.

The Video Grabber receives the Video signal from the VTR in order to show it on the screen.

PVA

The PVA (PC Video Adapter) receives the US video signal from BLC and the overlay from the VGA board.

It mixes the two signals and sends out the result to the monitor or to the video peripherals (BW analog. Printer, VTR...).

It receives from the VGA the video sync and sends it to the BLC.

From the SoundBlaster it receives the audio signals from VTR and microphone. From DCP it receives the audio Doppler.

Inside the PVA all them are amplified, sent to the Display Group and then to the speakers.

From the Frame Grabber it receives the VTR video signals and visualize them to the monitor.

PLC

The PLC (PC Link Control) is responsible about al the communication processes between the PC group and the rest of the unit.

It sends out to the BLC all the SW necessary to start the unit, all the commands by keyboard, the focalization data and all the commands necessary to set-up the unit according the probe and the preset. Also receives every data that has to be stored on the HDD (images for the internal databases...).

All the communications of the data received from BLC and for the BLC to/from the PC are done by PCI bus.

AKCP

The AKCP (Audio Keyboard Control Panel) is one interface board.

On it, from the PSE, arrive the voltages to supply the Display and the keyboard group and, by a connector 15 pins, a cable send them to the mentioned boards.

Also there are the connectors for the footswitch, for the audio out for VTR, Headphones and one audio input, where it arrives the audio from the SoundBlaster (for the PVA).

All the audio out arrives from the PVA.

VCP

The VCP (Video Connector Panel) is the interface for the video signals. On it there is one auxiliary VGA, the video output for the VTR, for a BW printer (composite), the remote control for the VTR and one testing connector.

ELECTRIC AND SCHEMATICS DIAGRAMS

All the diagrams are not enclosed and confidential. The invoice of them, after an official request, is subordinate at the approval of the Factory.

61XX - SERVICE MANUAL

Chapter

1 - Traceability

This chapter deals with all the parts of 61XX whose serial number may be associated to the unit's serial number, in order to find out all the customers who have a particular part installed in the equipment.

This procedure will help the service technician to operate on all the units which could have troubles with a defective part; if this part is traceable the location of the defective units is immediate. The list of traceable part is in the next tables.

The traceability of a 61XX part can be based on:

- its Serial Number (S/N)
- its Lot Number

The Serial Number of a 61XX part is composed of two (2) or more figures. It is reported in a label affixed to:

- board: on the labels bar or on the printed circuit
- unit: on the rear panel

The following 61XX Part Lists identify all parts that are traceable and their corresponding traceability key.

61XX - SERVICE MANUAL

Chapter

2 - Parts list

6100 Boards

CODE	DESCRIPTION	QTY	TRAC	ESD
9501087000	6100 ICS INPUT CONN. SWITCH	1	S/N	Y
9501089000	6100 ITR INPUT TX-RX	12	S/N	Υ
9501091000 /010	61xx ICC INPUT CW/CLOCK	1	S/N	Y
9501092000	61xx IMC INP.MASTER CONTROL	1	S/N	Υ
9501092010	61xx IMC INP.MASTER CONTROL new with TEE control module	1	S/N	Y
9501092100	61xx IMC INP.MASTER CONTROL with TEE control module	1	S/N	Y
9501093000	61xx DIP DIGITAL IMAGE PROC.	1	S/N	Υ
9501094000	61xx DCP DIGITAL COLOR PROC.	1	S/N	Υ
9501095000	61xx DEP DIGITAL EXTEN.PROC.	1	S/N	Υ
9501097000	61xx BSC BACK SCAN CONVERTER	1	S/N	Υ
9501099000	61xx BLC BACK LINK CONTROL	1	S/N	Υ
9501100000	61xx SPS SWITCH POWER SUPPLY	1	S/N	Υ
9501101000	6100 SPR SWITCH POWER REGULATOR	1	S/N	Υ
9501103000	61xx BMB BUS MOTHER BOARD	1	S/N	Ν
9501172000	"61xx" UHP USB&HEADPHONE PANEL	1	Ν	Υ
9501173000	"61xx" FAN CONNECTOR BOARD	1	Ν	Ν
9730650085	DVD WRITER	1	Ν	Y
9730650037	CD-ROM DRIVE 52X-IDE	1	Ν	Ν

TRC: Traceability ESD: Electrostatic Discharge

Read carefully the instructions in Section 2 for spare parts composition and assembling.

ΝΟΤΕ

6150 Boards

2

CODE	DESCRIPTION	QTY	TRAC	ESD
9501087100	6150 ICS INPUT CONN. SWITCH	1	S/N	Y
9501090000	6150 ITR INPUT TX-RX	12	S/N	Υ
9501091000 /010	61xx ICC INPUT CW/CLOCK	1	S/N	Υ
9501092000	61xx IMC INP.MASTER CONTROL	1	S/N	Υ
9501092010	61xx IMC INP.MASTER CONTROL new with TEE control module	1	S/N	Υ
9501092100	61xx IMC INP.MASTER CONTROL with TEE control module	1	S/N	Υ
9501093000	61xx DIP DIGITAL IMAGE PROC.	1	S/N	Υ
9501094000	61xx DCP DIGITAL COLOR PROC.	1	S/N	Υ
9501095000	61xx DEP DIGITAL EXTEN.PROC.	1	S/N	Υ
9501097000	61xx BSC BACK SCAN CONVERTER	1	S/N	Υ
9501099000	61xx BLC BACK LINK CONTROL	1	S/N	Υ
9501100000	61xx SPS SWITCH POWER SUPPLY	1	S/N	Υ
9501102000	6150 SPR SWITCH POWER REGULATOR	1	S/N	Υ
9501103000	61xx BMB BUS MOTHER BOARD	1	S/N	Ν
9501172000	"61xx" UHP USB&HEADPHONE PANEL	1	Ν	Υ
9501173000	"61xx" FAN CONNECTOR BOARD	1	Ν	Ν
9730650085	DVD WRITER	1	Ν	Υ
9730650084	COMBO CD WRITER/DVD READER	1	Ν	Ν

TRC: Traceability ESD: Electrostatic Discharge

ΝΟΤΕ

Read carefully the instructions in Section 2 for spare parts composition and assembling.

PC Group

CODE	DESCRIPTION	QTY	TRAC	ESD
9102572100	61XX PC UNIT	1	S/N	Y
9102572110	61XX PC UNIT new	1	S/N	Υ
9102572600	61XX PC UNIT + Virtual Navigator	1	S/N	Υ
9102572610	61XX PC UNIT + Virtual Navigator new	1	S/N	Υ

TRC: Traceability ESD: Electrostatic Discharge

ΝΟΤΕ

Read carefully the instructions in Section 2 for spare parts composition and assembling. All the parts which compose the PC group are sensible to the electrostatic discharges.

CODE	DESCRIPTION	QTY	TRAC	ESD
9501105000	"61xx" PLC PC LINK CONTROL	1	-	Y
9501109000	"61xx" PSE PC SUPPLY ECG	1	-	Υ
9501110000	"61xx" PVA PC VIDEO ADAPTER	1	-	Υ
9501168000	"61xx" AUDIO & KEYBOARD CONNECTOR PANEL	1	-	Υ
9501169000	"61xx" VIDEO CONNECTOR PANEL	1	-	Υ
9103045000	X-View USB LICENSE KEY + PASSWORD	1	S/N	Ν
9730650091	HDD SPARE	1	S/N	Υ

Available Boards inside the PC Groups 61XX

TRC: Traceability ESD: Electrostatic Discharge

ΝΟΤΕ

Read carefully the instructions in Section 2 for spare parts composition and assembling.

Monitor

CODE	DESCRIPTION	QTY	TRAC	ESD
9102854000	61XX CRT Monitor old	1	S/N	Ν
9102854010	61XX CRT Monitornew	1	S/N	Ν
9103019000	19" LCD Monitor	1	S/N	Ν
9103019100	19" LCD Monitor for articulated arm	1	S/N	Ν
9103021000	21" LCD Monitor	1	S/N	Ν
8107786001	Cover for CRT monitor support	1	-	Ν
9103170000	Anterior 19" LCD cover	1	-	Ν
9103171000	Rear 19" LCD cover	1	-	Ν
8108691100	Lower frontal cover monitor support	1	-	Ν
8108692100	Upper frontal cover monitor support	1	-	Ν
8108697100	Rear cover monitor support	1	-	Ν

TRC: Traceability ESD: Electrostatic Discharge

ΝΟΤΕ

Read carefully the instructions in Section 2 for spare parts composition and assembling.

6150 Display Group

CODE	DESCRIPTION	QTY	TRAC	ESD
9102706500	WHOLE DISPLAY GROUP (complete group assembled with plastic panel, keys, displays and electronic parts)	1	S/N	Y
8107470000	Small display knob	1	-	Ν
8107471511	Display knob switch cap (plastic)	1	-	Ν
8107551500	Membrane for lower keys display group	1	-	Ν
8107552500	Frontal plastic panel for lower keys display group	1	-	Ν
8107553500	Frontal plastic panel display and speakers	1	-	Ν
8107710500	Speaker's cover	1	-	Ν
9501211000	KD (KEYBOARD DISPLAY) board	1	S/N	Υ



6100 Display Group

CODE	DESCRIPTION	QTY	TRAC	ESD
9102706000	WHOLE DISPLAY GROUP (complete group assembled with plastic panel, keys, displays and electronic parts)	1	S/N	Y
8107461014	Cap for display keys	1	-	Ν
8107470010	Green small display knob	1	-	Ν
8107471011	Display knob switch cap (plastic)	1	-	Ν
8107551000	Membrane for lower keys display group	1	-	Ν
8107552000	Frontal plastic panel for lower keys display group	1	-	Ν
8107553000	Frontal plastic panel display and speakers	1	-	Ν
8107620010	Transparent cover for display	1	-	Ν
9501108000	KD (KEYBOARD DISPLAY) board	1	S/N	Υ



Plastic Parts

6150 Plastic Parts

CODE	DESCRIPTION
9102619100	Reinforced probe holder assembled white
8107853000	Left probe holder handle
8107376000	Holder for pencil probes
9102969000	Left probe support (composed by the codes 8107853000 and 8107376000)
8107602500	Backside plastic panel
8107404000	Green label backside panel
9102965000	Rear cover (composed by the previous codes 8107602500 and 8107404000, plus the codes 0600000412, 0600000192, 0600000413 and 8105749000 necessary to the complete assembly)
8107597000	Frontal bumper
8107624000	Plate "No Parking"
9102967000	Front bumper (composed by the codes 8107597000 and 8107624000)
8107598000	Backside humper
9102966000	Rear bumper (composed by the code 8107598000 and all the screws)
8107599500	Right bumper
9102963000	Right bumper (composed by the code 8107599500 and all the screws)
8107600500	L eft humper
9102964000	Left humper (composed by the code 8107600500 and all the screws)
7102704000	Left bumper (composed by the code 6107000500 and an the serews)
8107601500	Frontal plastic panel
9103097000	Front cover (composed by the code 8107601500 and all the items necessary to the installation)
8107603000	Right plastic panel
9102961000	Right cover (composed by the code 8107603000and all the items necessary to the installation)
9107604000	
8107604000	Left plastic panel
9102962000	installation)
8107368000	Hook for probe cables
8107495500	Probe connectors plate
8107556000	Rear cover for Display Group
8107715000	Upper cover for Display Group
8107649000	Rear lifting handle
8107691000	Right lifting handle
8107692000	Left lifting handle
8107851000	Green frontal handle
8107852000	Right probe support
8107858000	Handle for rotation block

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8107913000	Gel holder
8107946510	Frontal metallic cover for upper plastic panel (without Virtual Navigator)
8107946520	Frontal metallic cover for upper plastic panel (with Virtual Navigator)
8108201500	Upper lateral metallic cover
8108424000	Fixed frontal cover for clumn
8108425000	Fixed back cover for column
8108426000	Mobile column cover (half shell-the column is covered by two equal half shells)
8108473000	Plate keyboard lock
8108685000	Cable's holder hoock
9102256001	Peripheral fixing cables
8107410000	Posterior wheel cover
9102623000	Support for ECG cable
9102869510	Upper metallic cover (without Virtual Navigator)
9102869520	Upper metallic cover (with Virtual Navigator)
9102877500	Upper plastic cover
9103216000	Kit replacement reinforced probe holder

6100 Plastic Parts

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CODE	DESCRIPTION	
9102619110	Reinforced probe holder assembled green	
8107853000	Left probe holder handle	
8107376000	Holder for pencil probes	
9103233000	Left probe support (composed by the codes 8107853010 and 8107376000)	
8107602000	Backside plastic panel	
8107404000	Green label backside panel	
9103231000	Rear cover (composed by the previous codes 8107602000 and 8107404000 and all the items necessary to the installation)	
8107597000	Frontal bumper	
8107624000	Plate "No Parking"	
9102967000	Front bumper (composed by the codes 8107597000 and 8107624000)	
8107598000	Backside bumper	
9102966000	Rear bumper (composed by the code 8107598000 and all the screws)	
8107599000	Right bumper	
9103229000	Right bumper (composed by the code 8107599000 and all the screws)	
8107600000	Left bumper	
9103230000	Left bumper (composed by the code 8107600000 and all the screws)	
8107601000	Frontal plastic panel	
9103232000	Front cover (composed by the code 8107601000 and all the items necessary to the installation)	
8107603000	Right plastic panel	

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9102961000	Right cover (composed by the code 8107603000and all the items necessary to the installation)
8107604000	Left plastic panel
9102962000	Left cover (composed by the code 8107604000and all the items necessary to the installation)
8107368000	Hook for probe cables
8107495000	Probe connectors plate
8107556000	Rear cover for Display Group
8107715000	Upper cover for Display Group
8107649000	Rear lifting handle
8107691000	Right lifting handle
8107692000	Left lifting handle
8107851010	White frontal handle
8107852000	Right probe support
8107858000	Handle for rotation block
8107913000	Gel holder
8107946510	Frontal metallic cover for upper plastic panel (without Virtual Navigator)
8107946520	Frontal metallic cover for upper plastic panel (with Virtual Navigator)
8108201000	Little lateral metallic insert
8108201500	Upper lateral metallic cover
8108424000	Fixed frontal cover for clumn
8108425000	Fixed back cover for column
8108426000	Mobile column cover (half shell-the column is covered by two equal half shells)
8108473000	Plate keyboard lock
8108685000	Cable's holder hoock
9102256001	Peripheral fixing cables
8107410000	Posterior wheel cover
9102623000	Support for ECG cable
9102869000	Upper metallic cover
9102903000	Upper metallic small cover (without Virtual Navigator)
9102903010	Upper metallic small cover (with Virtual Navigator)
9102877000	Upper plastic cover
9103216100	Kit replacement reinforced probe holder








Keyboard Parts

6150 Keyboard Parts

CODE	DESCRIPTION	
(*) 9102639500	Whole assembled keyboard group	
340000053	Trackball	
8105816000	Slider knob	
8106069010	Keyboard plate (num lock)	
8107458500	Rubber membrane (distance,)	
8107459500	Rubber membrane (freeze,)	
8107460000	Rubber membrane (on off key)	
8107466500	Left mouse key	
8107467500	Central mouse key	
8107468500	Right mouse key	
8107469000	Big Encoder knob	
8107470000	Small encoder knob	
8107471501	Switch for encoder printed "MARK"	
8107471502	Switch for encoder printed "TOOLS"	
8107471503	Switch for encoder printed "POWER"	
8107471504	Switch for encoder printed "DOPPLER"	
8107471507	Switch for encoder printed "PRF/BASELINE"	
8107471508	Switch for encoder printed "FREQ/TEI"	
8107471509	Switch for encoder printed "B/M"	
8107471510	Switch for encoder printed "DEPTH/ZOOM"	
8107471512	Switch for encoder printed "STEER/ANGLE"	
8107471513	Switch for encoder printed "COLOR"	
8107473500	Plastic keyboard	
8107474000	Label for plastic keyboard	
(*) 9501106000	KC (KEYBOARD CONTROL)	
(*) 9501107000	KS (KEYBOARD SWITCH)	
9730640005	Alphanumeric keyboard	

(*) ESD sensible part

The various switches (code 8107471XXX) are plastic switches placed in the middle of the encoder knobs. Every name indicates the function printed on the plastic part.

They allow the user to push the switch placed on the printed circuit.

ESAOTE	8106069010		
8107474000		initi i	8107473500
9730640005			105816000
8107469020	8107467500	810	7470000
0.00	Y.		
8107466500	340000053	8107468500	

Whole assembled keyboard for 6150



6100 Keyboard Parts

CODE	ITEM
(*) 9102639000	Whole assembled keyboard group
340000052	Trackball
8105816000	Slider knob
8106069010	Keyboard plate (num lock)
8107458000	Rubber membrane (not printed)
8107459000	Rubber membrane (not printed)
8107460000	Rubber membrane (ID key)
8107461001	Cap for membrane printed "POINTER"
8107461002	Cap for membrane printed "PLEX"
8107461003	Cap for membrane printed "LINE"
8107461004	Cap for membrane printed "UPDATE"
8107461005	Cap for membrane printed "CW"
8107461006	Cap for membrane printed "PW"
8107461007	Cap for membrane printed "PWR D"
8107461008	Cap for membrane printed "CFM"
8107461009	Cap for membrane printed "CONTRAST"
8107461010	Cap for membrane printed "M-MODE"
8107461011	Cap for membrane printed "B-MODE"
8107461012	Cap for membrane printed "SYMBOL LEFT"
8107461013	Cap for membrane printed "SYMBOL RIGHT"
8107462001	Cap for membrane printed "SYMBOL DISTANCE"
8107462002	Cap for membrane printed "ANNOT"
8107462003	Cap for membrane printed "MEASURE"
8107462004	Cap for membrane printed "REPORT"
8107462005	Cap for membrane printed "START END"
8107462006	Cap for membrane printed "EXAM REV"
8107462007	Cap for membrane printed "PATIENT ID"
8107462008	Cap for membrane printed "PROBE"
8107462009	Cap for membrane printed "ARCHIVE REV"
8107462010	Cap for membrane printed "PRESET"
8107462011	Cap for membrane printed "PHYSIO"
8107462012	Cap for membrane printed "BIOPSY"
8107462013	Cap for membrane printed "MENU"
8107462014	Cap for membrane printed "ADJUST"
8107462015	Cap for membrane printed "VTR"
8107462016	Cap for membrane printed "ORIENTATION"
8107462017	Cap for membrane printed "REVERSE"
8107462018	Cap for membrane printed "ACQUIRE"
8107462019	Cap for membrane printed "3"
8107462020	Cap for membrane printed "2"
8107462021	Cap for membrane printed "1"
8107462022	Cap for membrane printed "IMAGE"
8107462023	Cap for membrane printed "CLIP"
8107463001	Cap for membrane printed "FREEZE"
8107466000	Left mouse key
8107467000	Central mouse key
8107468000	Right mouse key
8107469010	Big Encoder knob
· · · · · · ·	0

8107470010	Smal encoder knob
8107471001	Switch for encoder printed "MARK"
8107471002	Switch for encoder printed "TOOLS"
8107471003	Switch for encoder printed "POWER"
8107471004	Switch for encoder printed "DOPPLER"
8107471007	Switch for encoder printed "PRF/BASELINE"
8107471008	Switch for encoder printed "FREQ/TEI"
8107471009	Switch for encoder printed "B/M"
8107471010	Switch for encoder printed "DEPTH/ZOOM"
8107471012	Switch for encoder printed "STEER/ANGLE"
8107471013	Switch for encoder printed "COLOR"
8107473500	Plastic keyboard
8107474000	Label for plastic keyboard
(*) 9501106000	KC (KEYBOARD CONTROL)
(*) 9501107000	KS (KEYBOARD SWITCH)
9730640005	Alphanumeric keyboard

(*) ESD sensible part

In the 6100 the membrane is not printed.

Every rubber key has on it a printed plastic cap with the related function of the key (all the codes 8107461XXX, 8107462XXX and the 8107463001 are single caps).

The dimension of the rubber membranes are the same of the 6150, so please refer to the previous image.

The various switches (code 8107471XXX) are plastic switch placed in the middle of the encoder knobs. Every name indicates the function printed on the plastic part.

They allow the user to push the switch placed on the printed circuit.



Whole keyboard group 6100.

Various

No Spare Part is considered a traceable part or to be sent in advance.

CODE	DESCRIPTION
100000109	Frontal wheel
590000009	System's speaker
8107810500	6150 rear wheel
8107810000	6100 rear wheel
8107410000	61XX plastic cover for rear wheel
9102581500	6150 cooling group
9102581000	6100 cooling group
9102819000	Assembled fan for PC Group
9102821000	Spare fan for cooling group
8107971011	Plate MyLab70
8107971012	Plate MyLab70 X-Vision
8107971014	Plate MyLab60
8107971015	Plate MyLab70 XVG
8107971017	Plate MyLab70 X-Vision Veterinary
8107972000	Esaote logo
8610290001	RECOVERY DVD MYLAB FOR PC GROUP 9102572100/600
8610290002	RECOVERY DVD MYLAB FOR PC GROUP 9102572110/610
9610056001	CT markers box (30 peces - for Virtual Navigator)
9103194000	Whole assembled main switch, with supply plug and protection metallic frame
9103084000	Metallic frame protection for main switch+screws
8610264000	USB Service key
9102954000	Board's inserter
9103199100	Articulated arm
9103155100	Rotating group for articulated arm
9103176000	3D support for Radionics needle for Virtual Navigator

ΝΟΤΕ

Read carefully the instructions in Section 2 for spare parts composition and assembling.

3 - Main Power Cables

The 61XX unit is equipped with power cord cables having the following characteristics:

	Device Socket	Plug	Conductors #	Section	Length
CEE plug	EN60320/C19L type; 16A-250V	VII (7) VII type; 16A- 250V (European)	3	1,5 mm ²	2,5 m
CEI plug	EN60320/C19L type; 16A-250V	Type I/3 /16 type; 16A- 250V (Italian)	3	1,5 mm ²	2,5 m
NEMA plug	EN60320/C19L type; 15A-250V	NEMÁ 5-15 type; 15A- 250V (Medical grade)	3	AWG 14	3 m

According to the IEC 60601-1 standard these cables are marked by a competent body (TUV, UL, IMQ,..).

If these cables can't be used in your country because of the plug, they can be only replaced by other power cord cable having the same characteristics including the Safety mark.

1 - Service Menu



Some menu options are arranged in groups (identified by the symbol . To display the options included in a group, position the cursor on the group and press **ENTER**.

Select the SERVICE option with the trackball and press ENTER to continue. The system displays the following Service menu:



To access the different folders, position the trackball on the required folder tab and press **ENTER**.

Licenses Option

This options is internally organized in folders. This procedure makes it possible:

- To activate Demo licenses (available only accessing to the system as "Service user" connecting the USB service key).
- To disable active licenses.

Once entered the LICENSES option, the system displays:



APPLICATIONS OPTIONS				
	ELAPSED TIME	TIME LEFT	ENABLE DEMO	STATUS
GENERAL IMAGING				
ABDOMINAL				
NEONATAL				
PEDIATRIC				
BREAST				
MUSCULO-SKELETAL				
SMALL PARTS				
THYROID				
UROLOGY				
OB-GYN				
OB-FETAL				
GYNECOLOGY				
VASCULAR				
ADULT CEPHALIC				
CARDIAC				
PEDIATRIC CARDIAC				
			OK	CANCEL

The menu is organized in two folders. The **Tab** \leftrightarrows key is used to jump over quickly from field to field; the keys **Pgup** \blacktriangle and **Pgdn** \checkmark open the drop down menus and scroll among the relevant options.

Parameter Setting

- Position the trackball on the field to be changed and press ENTER to confirm.
- Use the alphanumeric keyboard to type in the characters.
- In the drop down menus, select the required option and press ENTER to confirm.
- Press OK to confirm.

After the modifications have been confirmed, the system displays the following message:



Applications Folder

This procedure disables active applications. To de-activate an application position the trackball on the desired field and uncheck it by pressing **ENTER**.

```
ΝΟΤΕ
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The application can be re-activated both by this option of the Service menu and by entering the license number ("License" option of the **MENU** key).

Options Folder

This procedure enables activation of the available Demo licenses. Demo licenses last five hundreds (500) working hours before expiring; once expired, it can not be re-activated. If a demo license is installed, the "Licenses/System Info" option of the **MENU** key allows the user to check its expiring date.

To activate a demo license position the trackball on the desired field and press **ENTER** to check it. Use the same procedure to disable licenses.

The STATUS checkbox is displayed only if a licence has been acquired and it allows to disable the selected license. To de-activate a license position the trackball on the desired field and uncheck it by pressing **ENTER**.

ΝΟΤΕ

The license can be re-activated both by this option of the Service menu and by entering the license number ("License" option of the **MENU** key).

Settings Option

This options is internally organized in folders. This procedure makes it possible:

- To chose the default language.
- To set the monitor type.

Once entered the SETTINGS option, the system displays:

LANGUAGE MONITOR			
	Distance D		
		OK.	GANCEL

The menu is organized in two folders. The **Tab** \leftrightarrows key is used to jump over quickly from field to field; the keys **Pgup** \blacktriangle and **Pgdn** \checkmark open the drop down menus and scroll among the relevant options.

- Position the trackball on the field to be changed and press ENTER to confirm.
 - Use the alphanumeric keyboard to type in the characters.
 - In the drop down menus, select the required option and press ENTER to confirm.
 - Press OK to confirm.

After the modifications have been confirmed, the system displays the following message:



Language Settings Folder

This procedure is used for choosing the default language.

Languages One of the following languages can be set as default one:

- English
- Italian
- French
- German
- Spanish

ΝΟΤΕ

With the exception of Italian, German, Spanish and French language countries, all 61XX units delivered by Esaote have English as the default language.

Monitor Folder

Starting from release 2.02, in order to uniform the performances of the monitors used with 61XX, different post processing maps have been created to each of them, so it is important to set up the monitor correctly.

Monitors

One of the following monitor can be set:

- XCRT (when the monitor is the CRT 17")
- XVision (when the monitor is the LCD 19")
- XVision W (when the monitor is the LCD 21")

2 - Hard Disk Configuration Menu

This procedure can be activated only if the Service key is inserted before switching on the unit.

To activate the HD Configuration menu the trackball has to be switched to pointer mode: press **POINTER** key to activate it.

Press **ARCH REV** to enter in archive review, place the pointer on the Hard Disk icon and press **UNDO** key. The Hard Disk menu options may differ in Freeze, Exam Review and Archive Review. When all options are displayed the menu is the following:

> OPERATIONS RETRY FAILED OPERATIONS RESET FAILURE FLAG PROPERTIES NETWORK CONFIGURATION IP ADDRESS CONFIGURATION RECOVER ARCHIVE EXAMS NOT ARCHIVED

Place the pointer on the desired option and press ENTER to confirm the selection.

Operations

The dialogue window displays the list of exams (in the Details column), the operation status (completed, in progress or failed), the date and time of the operation and the type of operation. This option is always available (i.e. it does not require the Service key to be shown).

Retry Failed Operations

The system automatically repeats all failed operations. This option is always available (i.e. it does not require the Service key to be shown).





See the Operator manuals for further details

See the Operator manuals for further details

Reset Failure Flag

This option is used to eliminate icon bar without having to repeat or delete failed operations. This option is always available (i.e. it does not require the Service key to be shown).

Properties

The system displays the free disk space, the name and the IP address of the unit and its AE Title. This option is always available (i.e. it does not require the Service key to be shown).

Network Configuration

This option allows the network to be configured.

Please refer to Section 10 – Chapter 1 for further detail on network configuration.

IP Address Configuration

This option allows the user to set the network or to modify some parameters. This option is always available (i.e. it does not require the Service key to be shown).

Recover Archive

The system has been designed to preserve as much data integrity as possible. This procedure allows rebuilding of the archive, if the hard disk is corrupted.

Do not switch the unit off while this procedure is running. The Hard Disk could be damaged.

Exams not Archived

This option shows the list of exams which have been performed and not archived into the local database. From this window you can select the exams to be saved onto the local hard disk.

The Service key is

See the Operator

See the Operator

manuals for further

details

details

manuals for further

See the Operator manuals for further details

See the Operator manuals for further details

WARNING

See the Operator manuals for further details



3 - PC Printer Configuration Menu and PC Printer Installation

The listed procedures can be activated only if the Service key is inserted before switching on the unit.

61XX manages both USB and Network printers. Please refer to Esaote web site

http://www.esaote.com for the list of the printers directly managed by 61XX.

Once one of this printers is installed and connected, the system automatically recognizes it and shows the PC Printer Icon on screen.

To activate the PC Printer Configuration menu the trackball has to be switched to pointer mode: press **FREEZE** and then the **POINTER** key to activate it.

Place the pointer on the printer icon and press **UNDO** key. The system displays the following menu:

OPERAT	FIO!	(S		
CONFIG	GUR/	TIC	N	
PRINT	то	PC	PRINTER	NOW

Place the pointer on the desired option and press ENTER to confirm the selection.

Operations

The operator can control the print queue and set print preferences .

🌡 hp LaserJet 1150 Driver				_ 🗆 🗙		
Printer	Document View	Не1р				
Document	Name	Status	Owner	Pages	stze	Sub
4						
a documon	stat in avour					

This option is always available (i.e. it does not require the Service key to be shown).





See the "Operator

details

manuals" for further

Configuration

This option allows the default printer to be set if more printers have been configured.

Printers and Fax	es			
🛞 васк + 🌖 + 岁	Sear	rch 📂 Folders 🔢 🖬		
Address 🌄 Printers a	and Faxes			💌 🄁 GO
Printer Tasks	*	EPSON Stylus C86 Series	Open	
add a printer			Set as Default Printer	
printing			Pause Printing	
preferences Pause printing			Sharing Use Printer Offline	
👌 Share this prin			Create Shortcut	^
Rename this printer				
Belete this printer			Rename	
<pre>& Set printer properties</pre>			Properties	
See Also	¥			
Other Places	*			
Details	*			

Place the cursor on the PC printer icon and press **UNDO** key to open the menu. Select "Set as default printer" to activate it.

Print to PC printer now

This option allows immediate printing without waiting to complete the set printer format. This option is always available (i.e. it does not require the Service key to be shown).

PC Printer Installation

61XX supports both USB and network printers.

Following the rapid replacement of the peripherals, particularly regarding the PC printer, an updated list of peripherals is available on the Esaote web site http://www.esaote.com.

Printers drivers and installation instructions are included in a dedicated CD code 8610292000_rev.B. An ISO image of the disk is downloadable from the protected site csa.etosea.com (the path is: International Activities \rightarrow Imaging – Ultrasound \rightarrow Service \rightarrow Documentations \rightarrow Printers for MyLab Family \rightarrow Software \rightarrow Additional Drivers CD – 8610292000B).

ΝΟΤΕ

Be sure to burn a CD with the printers drivers using a PC with installed an antivirus updated to the latest version.

See the "Operator manuals" for further details ΝΟΤΕ

ESAOTE does not test all printer models available on the market. Other printers may be therefore compatible with our systems, and require different installation procedures to ensure their complete range of performances.

When installing a printer not tested by Esaote, possible problems are responsibility of the installer. If you like to proceed with the installation is suggested to test the printer for a adequate period of time. If the printer is proved to be incompatible, it could be necessary to recover the hard disk.

Generic Network printer installation procedure

This procedure describes how to install a printer with a network interface.

The printer installation requires a basic knowledge of networking environments: it is suggested to contact the network administrator before proceeding with the configuration. During the installation the printer IP address is required: ask the administrator for assigning the proper IP address to the printer.

Note

The printer has to be set with a fix IP address: DHCP configuration can not be set.

Do not install the printer as shared printer.

Refer to the printer user manual to correctly set the IP address.

Because of its power consumption, the network printers must be powered only through the mains and NOT through the MyLab insulation transformer.

WARNING

Since the printer must be powered directly through the mains, it can not be installed inside the Patient Area!

For safety reason the network printers must be connected to the MyLab via the LAN port, do not use the USB port even if present.

WARNING

Do not connect the printer to MyLab through the USB port even if present.

The instructions refer to MyLab already network configured and connected. Once the drivers have been installed, the printer has to be configured (through the MENU key) for its remote control.

Tools

- Service key code 8610264000.
- Printer driver: the drivers are available on the "Additional drivers for MyLab" CD reference code 8610292000 Rev.B.
- N.1 RJ45 Network Cable.

Procedure

- 1. Connect the printer to the network.
- 2. Properly power the printer and switch it on.
- 3. Manually set the IP address of the printer from the printer's control panel. Refer to the printer user manual for operating instructions.
- 4. Insert the Service Key and switch MyLab on.
- 5. As soon as Windows start, select "Start>Settings>Printers and Faxes".
- 6. Click on "Add a printer". The system displays the "Add Printer Wizard". Click "Next" to continue.
- 7. Insert the "Additional drivers for MyLab" CD.
- 8. Select "Local printer attached to this computer" and verify that "Automatically detect and install my Plug and Play printer" is not checked. Click "Next" to continue.

Add Printer Wizard
Local or Network Printer The wizard needs to know which type of printer to set up.
Select the option that describes the printer you want to use: Local printer attached to this computer Automatically detect and install my Plug and Play printer A network printer, or a printer attached to another computer To set up a network printer that is not attached to a print server, use the "Local printer" option.
<u>All Mext > Cancel</u>

9. Select "Create a new port" and set "Standard TCP/IP port". Click "Next" to continue.

Add Printer Wizard		
Select a Printer Port Computers communicate with printers through ports.		
Select the port you want your printer to use. If the port is not listed, you can create a new port.		
Ouse the following port: LPT1: (Recommended Printer Port)		
Note: Most computers use the LPT1: port to communicate with a local printer. The connector for this port should look something like this:		
<u>C</u> reate a new port: Type of port: <u>Standard TCP/IP Port</u>		
< <u>B</u> ack <u>N</u> ext > Cancel		

10. The "Add Standard TCP/IP Printer Port Wizard" windows appears. Click "Next" to continue.



11. Insert the previously configured IP address of the printer in the "Printer Name or IP Address" field; the "Port Name" field will be filled automatically. If you want you can change the description for this port. Click "Next" to continue.

Add Standard TCP/IP Printer Port Wizard		
Add Port For which device do you want to add a port?		
Enter the Printer Name or IP ad	dress, and a port name for the desired device.	
Printer Name or IP <u>A</u> ddress:	192.168.39.212	
Port Name:	IP_192.168.39.212	
	<u>All Next</u> → Cancel	

12. The system could ask additional information. Click "Next" to continue.

Add Standard TO	CP/IP Printer Port Wizard 🛛 🛛 🔀
Additional Port The device (t Information Required could not be identified.
The device is not 1. The device is 2. The network 3. The device is 4. The address If you think the ar- the address and is select the device Device Type ③ Standard	found on the network. Be sure that: turned on. is connected. properly configured. on the previous page is correct. ddress is not correct, click Back to return to the previous page. Then correct berform another search on the network. If you are sure the address is correct, type below. Generic Network Card
O Custom	Settings
	< Back Next > Cancel

13. Click "Finish" to complete the port addition, then wait till the port is configured.

Add Standard TCP/IP Prin	ter Port Wiza	rd	\mathbf{X}
	Complet TCP/IP You have selec	ing the Add Standard Printer Port Wizard cted a port with the following characteristics.	
	SNMP: Protocol: Device: Port Name: Adapter Type:	No RAW, Port 9100 192.168.39.212 PR1 Hewlett Packard JetDirect Ex (single port)	
	I o complete th	iis wizard, click Finish.	
		< <u>B</u> ack Finish Cancel	

14. Click "Have Disk" in the "Add Printer Wizard" to select the proper driver to be installed.

Add Printer Wizard			
Install Printer Software The manufacturer and model determine which printer software to use.			
Select the manufacturer and model of your printer. If your printer came with an installation disk, click Have Disk. If your printer is not listed, consult your printer documentation for compatible printer software.			
Manufacturer 🔼	Printers 🔼		
Agfa	AGFA-AccuSet v52.3		
Alps Apollo	AGFA-AccuSetSF v52.3		
Apple	AGFA-AccuSet 800		
APS-PS	AGFA-Accuset 8005F V52.3		
This driver is digitally signed. Windows Update Have Disk Tell me why driver signing is important			
	< <u>B</u> ack Next> Cancel		

15. Click "Browse" to select the proper driver to be installed and proceed with the installation. Please note that only the driver certified from Esaote has to be installed! Any other printer driver could give problems.

- 16. Click "Next" several times to finish the installation.
- 17. When the operation is completed click "Finish".
- 18. The system starts copying files.
- 19. Right-click on the installed printer icon and select "Printing Preferences".
- 20. Set the correct paper type.
- 21. Print the test page.
- 22. Configure the printer through the MENU key, to remote control it.

Generic USB printer installation procedure

This procedure describes how to install a printer with an USB interface.

Tools

- Service key code 8610264000.
- Printer driver: the drivers are available on the "Additional drivers for MyLab" CD reference code 8610292000 Rev.B.
- N.1 USB A/B cable (code 8830749000 1.5m).
- N.1 power cord (code 8820005000 1.5m).

Procedure

- 1. Connect the printer to the MyLab's power supply.
- 2. Switch the MyLab on (with the service key inserted).
- 3. Connect the printer to the free USB port on the rear panel of MyLab using an USB A/B cable.
- 4. The system automatically detects new hardware.
- 5. The system displays the "Found New Hardware Wizard" window, select "No, not this time" and click "Next" to continue.



- 6. Select "Install from a list or a specific location" and click "Next" to continue.
- 7. Insert the "Additional drivers for MyLab" CD in the unit. Please note that only the driver certified from Esaote has to be installed! Any other printer driver could give problems. Select only "Include this location in the search" and browse selecting the correct path for the driver. Click "Next" to continue.
- 8. The system starts copying files. Press "Continue Anyway" if the message "...has not passed Windows Logo testing to verify its compatibility with Windows XP" appears.
- 9. When the operation is completed click "Finish". The installed printer is displayed in the "Printer and Faxes" window.
- 10. Right-click on the installed printer icon and select "Printing Preferences".
- 11. Set the correct paper type.
- 12. Print the test page.
- 13. Configure the printer through the **MENU** key, to remote control it.

Configuring a PC Printer after the installation

- Connect the PC printer.
- Turn both the printer and the system on.
- Enter real-time.
- Press MENU key.
- Select "Peripherals" option.
- The system displays the following menu:

-REC/PRINT 1		
		2
		V
PROFILE:		
VIEW WINDOWS PRINT PROFILES	WINDOWS PRINTERS CONFIGURATION	

- REC/PRINT fields 1 and 2 are used to select the required peripheral to be remotely controlled by the keys 1 and 2. Select "Windows printer" in the desired field to activate the PC printer.
- Once the printer has been set, select the print format on the second drop-down menu. The available formats are listed below together with their pertaining icon.



- Press OK to confirm.
- Wait till the unit will display on the right side of the header bar the PC printer icon alongside with the icon of the selected format.



4 - Sony UP-21 MD - Print Size Settings

Enclosed you will find the instructions to optimise the settings of the Sony RGB printer. All the printers delivered by Esaote with the 61XX are already set according with the Video standard of the country where they will be delivered.

Settings

- Sony UP-21MD or UP-23MD RGB Printers
- Video Color Printer cables set REF. 9102911010
- External Monitor (suggested)

Procedure

- 1. Install the RGB printer on the cart and connect it to the 61XX via the cables set, leaving the printer remote control cable disconnected.
- 2. Before turning the printer on, select the required video standard on the printer rear panel.
- 3. Connect the printer outputs to an external monitor. Anyway, the printer settings can be directly controlled using the LCD display of the printer itself.
- 4. Switch both the printer, the monitor and the 61XX on.
- 5. Enter Real-Time and press the **MENU** key.
- 6. Select GENERAL PRESET, select the **Video** tab, set the Video standard and wait for the re-start message.
- 7. Press the **MENU** key again and select **PERIPHERALS**.
- 8. Set "Thermal color printer" and "Sony" in one of the fields REC/PRINT 1 or 2.
- 9. Press **OK** to confirm and wait for the re-start message.

RGB printer icon

Tools

- 10. Switch the unit off by pressing the Shut Down key.
- 11. Switch the unit on.
- Press the printer [MENU] button: it will activate the printer settings menu. The Menu can be scrolled by pressing by pressing the [<] and [>]buttons and, once an option is selected, you can scroll its menu by pressing the [∧] and [∨] buttons.
- 13. Once the value to be changed is selected, you have to press the [<] and [>]buttons to modify it.
- 14. For the COLOR ADJUST and LAYOUT SETUP, WINDOW sub menu, any modification has to be confirmed by pressing [SAVE] and then [EXEC].
- 15. The table shows which value has to be set for the mentioned parameters:

Menu	Option	Parameter	PAL	NTSC
COLOR ADJUST	CYN-RED		0	0
	MAG-GRN		0	0
	YEL-BLU		0	0
	DARK		0	0
	LIGHT		0	0
	SHARPNESS		15	15
	INTERPOL		OFF	OFF
LAYOUT SETUP	MEMORY		FRAME	FRAME
	WINDOW	HSTART	12	0
		VSTART	8	0
		HWIDTH	936	936
		VWIDTH	556	472
PRINTER SET UP	GAMMA		NORMAL	NORMAL
INPUT SETUP	INPUT SEL		RGB	RGB
	GAIN		-2	-2
	OFFSET		1	1
	AGC		OFF	OFF

- 16. Press [MENU] to exit from the configuration procedure.
- 17. Connect the remote control cable and check the settings by making a demo print.

The following instruction refer to the printer keys

5 - Mitsubishi CP900E -Print Size Settings

Enclosed you will find the instructions to optimise the settings of the Mitsubishi Video printer. All the printers delivered by Esaote with the 61XX are already set according with the Video standard of the country where they will be delivered.

The Mitsubishi Model CP900E is a PAL video standard thermal printer.

Settings

- Mitsubishi CP900 Video Printer
- Video Color Printer cables set REF 9102911010
- External Monitor

Procedure

- 1. Install the RGB printer on the cart and connect it to the 61XX via the cables (do not connect the Remote Control cable).
- 2. Verify that the printer input switch, placed in the rear panel, are correctly set:

Switch	Set
RGB	75 Ohm/High
SYNC	High
	0

- 3. Connect the printer outputs to an external monitor.
- 4. Switch both the printer, the monitor and the 61XX on.
- 5. Enter Real-Time and press the **MENU** key.

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- 6. Select GENERAL PRESET, select the **Video** tab and verify that the PAL video standard is set. If necessary, set it and wait for the re-start message.
- 7. Press the **MENU** key again and select **PERIPHERALS**.
- 8. Set "Thermal color printer" and "Mitsubishi" in one of the fields REC/PRINT 1 or 2...



Tools

ΝΟΤΕ

- 9. Press **OK** to confirm and wait for the re-start message.
- 10. Switch the unit off by pressing the Shut Down key.
- 11. Connect the remote control to the printer (input on the printer front panel).
- 12. Press the printer [DISPLAY] button: it will display the system screen on the external monitor.
- 13. Press the [FIELD/FRAME] till the message FRAME is displayed on the lower side of the screen.
- 14. Press the [MENU] key to display the printer menu on the monitor.
- 15. Select the INPUT option by pressing the $[\land]$ and $[\lor]$ buttons.
- 16. Select the RGB option by pressing the [>] and [<] buttons.
- 17. Press the [SET] key two (2) times to save the configuration.
- 18. Press the keys [MENU] and then [CLEAR] + [STOP] to display the service menu.
- 19. Select the GAMMA ADJ option by pressing the [∧] and [∨] buttons. Press the [>] key to access to its configuration menu.
- 20. The table shows which value has to be set for the mentioned parameters:

Parameter		Value	
COLOR		ALL	
HI			-16
MID		0	
LOW	15		
POINT	32	128	223

- 21. Press the [SET] key two (2) times to save the configuration. Wait for GAMMA SETTING message to stop flashing before proceeding with the settings.
- 22. Press again the keys [MENU] and then [CLEAR] + [STOP] to display the service menu.
- 23. Highlight the KEY SET option by pressing the [∧] and [∨] buttons. Press the [>] key to access to its configuration menu.
- 24. Verify that the MEN&PRN parameter is set to ON. If necessary, set it.
- 25. Press the [SET] key several times to close the Service menu.

The following instruction refer to the printer keys on the remote control

- 26. Press again the [DISPLAY] button to de-activate the printer menu.
- 27. Verify that the unit remote controls the printer by pressing the 1 or 2 key (depending on the settings).

6 - MD3000 - VTR Settings

The MD3000 VTR can be remotely controlled by the 61XX. The VTR must be provided with its RS232C serial interface board. In order to avoid the flickering when in play-back, the VTR must be properly set.

All the VTRs delivered by Esaote with the 61XX are already set according with this procedure.

Settings

- Panasonic MD3000 VTR equipped with RS-232 serial interface board.
- VTR cables set REF 9102909010.

Procedure

- 1. Remove the RS232 board from the VTR.
 - 2. Set the switches SW5001 and SW5002 as shown in the below figure.



- 3. Install the RS232 board in the VTR.
- 4. Connect the VTR to the 61XX using the VTR cables set (do not connect the Serial cable).
- 5. Switch both the VTR and the 61XX on.

ooo VTR icon

Tools

- 6. Enter Real-Time and press the **MENU** key.
- 7. With the trackball select PERIPHERALS.
- 8. Cancel any settings in the fields REC/PRINT 1 and 2. Wait for the re-start message.
- Press again the MENU key, select the GENERAL PRESET option, then the VIDEO tab and set the desired Video standard and the Input signal to S-VHS.
- 10. Press OK to confirm and wait for the re-start message.
- 11. Switch the unit off by pressing the Shut Down key.
- 12. Turn the unit on and enter Real-Time.
- 13. Press the VTR key in the 61XX keyboard and then the **PLAY** soft key.
- 14. Press the VTR [MENU] key till its menu will be displayed on the screen.
- 15. The key [FREAME/FIELD] toggles through settings parameters while the key [Rev-FWD] modifies the parameter value.
- 16. Verify that VISS is set to OFF; if necessary, set it.
- 17. Press [MENU] key several times till the Serial Interface board setting page is displayed.
- 18. Set the following values:

Field	Value
TRANSIMISSION RATE	9600
DATA BIT LENGTH	7 BIT
STOP BIT LENGTH	1 BIT
PARITY CHECK	ODD

- 19. Press the key [MENU] several times till the VTR menu disappears.
- 20. Connect the Serial cable to the VTR.
- 21. Press the **MENU** key, select **PERIPHERALS** and set "VTR" and "MD3000" either in the REC/PRINT 1 or 2 fields.
- 22. Wait for the re-start message and turn the unit off by pressing the Shut Down key.
- 23. Verify that the VTR remote control works correctly.

Play Back Quality and Frame Position



The **VTR** key activates the VTR Soft key menu. The displayed menu is:

STOP	BRIGHTN
PLAY	CONTRAST
PAUSE	SATUR
EJECT	
AUDIO	
REW	
FF	

VTR Soft Keys

The soft key are used for adjusting the contrast (**CONTRAST**), the brightness (**BRIGHTN**) and saturation (**SATUR**) of the Play-Back colors.

Press **PLAY** to see the recorded images on the display.
Chapter

7 - Measure Configuration



Service personnel can modify measurement descriptions.

Measure Configuration

The measurements descriptions, abbreviations and labels of both Cardiac and Vascular applications can be modified by the Service personnel.

Procedure

- Press MENU key.
- Select "Application Measurement" option.
- Select the desired application.
- The system displays the application measurement menu. To modify the description, place the cursor on the desired field and press **ENTER**.
- With the alphanumeric keyboard enter the new description.
- Press "OK" to confirm.

CAUTION

It is possible to change only the descriptions but NOT the calculation combined to the measure. Each measure is associated to a specific preset calculation (a velocity measure can be freely named but it will always measure a velocity).

61XX - SERVICE MANUAL

Chapter

8 - Special Characters for the Glossary

The Service key is required

Special characters (such as arrows) can be added to the list of the terms available for the glossary.

Procedure

- Switch the unit on with the service key inserted.
- Press the MENU key and select the "GLOSSARY" option.
- Select the "LIBRARIES SETUP" tab.
- Press the **Ctrl** + **Esc** keys.
- Select the "RUN" option and digit "CHARMAP".
- Select the "LUCIDA CONSOLE" font.



• Select the desired character, press the "SELECT" button and then the "COPY" one.

- Place the cursor on the desired box of the list of the words and press
 Ctrl + V to copy it.
- Press "OK" to confirm.

Repeat the procedure to insert further special characters.

Chapter

9. RECOVERY PROCEDURE

Due to the introduction of new types of PC group a new dedicated recovery DVD (code 8610290002) has been introduced in addition to the current recovery DVD (code 8610290001). The purpose of the DVDs is to restore the original conditions in the MyLab, after a defect in the HDD, or the replacement of this part or the PC group with another with different characteristics (for all the mentioned operations please refer to the right service manuals).

The DVD code 8610290002 is only dedicated to the new PCs code 9102572110 and 9102572610; for the previous PC models is still valid the DVD code 8610290001.

It's important to underline that the DVD code 8610290001 and 8610290002 are only a backup of Window XP, in order to reinstall it, the original data and drivers correlated.

Applying this procedure all the existing data will be overwritten (archives of images, settings, drivers...), and will be impossible to save them after.

To install MyLab software version and all the other software will be necessary to use the software pack.

If there is the necessity to perform one upgrade to a new PC, before proceed with it, please refer to the Technical Notes in order to see if it's necessary to perform any preliminary operations.

Tools

The necessary tools to proceed with a recovery are:

1-recovery DVD code 8610290001 or 8610290002.

2-SW release DVD code 8610293XXX (for MyLab60, MyLab70 and MyLab70 X-Vision) and 8610294XXX (for MyLab70XVG).

3-USB service key code 8610264000

4-Virtual Navigator SW CD code 8620078XXX (only in units equipped with the Virtual Navigator, PC group code 91025726XX ALL ICs)

Preliminary operations

The first step to perform is to modify the BIOS, in order to boot directly with the DVD.

According the type of board installed there are different steps to perform. It's possible to recognize the motherboard looking at the code written in the internal label positioned on the PC Group:

-Motherboard FOXCONN (code 9102586000 IC=0 and 9102572000/100/600 IC=0)

- 1. Turn the unit on and keep pressed the key to enter in the BIOS
- 2. In case the unit requests a password write "laser"
- 3. In the main page using the arrows move to select the voice "Advanced BIOS Features" and press <Enter>
- 4. Move to the voice "First Boot Device" and push <Enter>
- 5. In the menu which will appear select the voice "CDROM" and press <Enter>
- 6. Insert the recovery DVD code 8610290001 in the drive
- 7. Press <F10> to leave the BIOS and save the setup answering "Y" at the question that will appear; push <Enter>; the system will reboot automatically

-Motherboard ASUS (code 9102572000/100 IC=1)

- 1. Turn the unit on and keep pressed the key to enter in the BIOS
- 2. In case the unit requests a password write "laser"
- 3. In the page "MAIN" using the arrows move to select the voice "IDE configuration" and press <Enter>
- 4. Move to the voice "Onboard IDE Operate Mode" and push <Enter>
- 5. Move to the voice "Compatible mode" and push <Enter>
- 6. Move to the voice "IDE Ports settings" and push <Enter>
- 7. Move to the voice "Secondary P-ATA + S-ATA" and push <Enter> (in the case the PC group has the DVD drive in the primary IDE channel it's necessary to select the "Primary P-ATA + S-ATA")
- 8. Press <ESC> and using the arrows move to the menu "Boot" and select the voice "Boot Device Priority" and push <Enter>

- 9. Select the voice "1st boot device" and push <Enter>
- 10. Move to the description corresponding to the DVD and push <Enter>
- 11. Insert the recovery DVD code 8610290001 in the drive
- 12. Press <F10> to leave the BIOS and save the setup moving to the voice "OK" of the menu that will appear; push <Enter>; the system will reboot automatically

-Motherboard DFI (code 9102572000/100 IC=2 and 9102572600 IC=1)

- 1. Turn the unit on and keep pressed the key to enter in the BIOS
- 2. In case the unit requests a password write "laser"
- 3. In the main page using the arrows move to select the voice "Advanced BIOS Features" and press <Enter>
- 4. Move to the voice "First Boot Device" and push <Enter>
- 5. In the menu which will appear select the voice "CDROM" and press <Enter>
- 6. Insert the recovery DVD code 8610290001 in the drive
- 7. Press <F10> to leave the BIOS and save the setup answering "Y" at the question that will appear; push <Enter>; the system will reboot automatically

-Motherboard DFI LT600 (code 9102572110 IC=0 and 9102572610 IC=0)

- 1. Turn the unit on and keep pressed the key to enter in the BIOS
- 2. In case the unit requests a password write "laser"
- 3. In the main page using the arrows move to select the voice "Advanced BIOS Features" and press <Enter>
- 4. Move to the voice "First Boot Device" and push <Enter>
- 5. In the menu which will appear select the voice "CDROM" and press <Enter>
- 6. Insert the recovery DVD code 8610290002 in the drive
- 7. Press <F10> to leave the BIOS and save the setup answering "Y" at the question that will appear; push <Enter>; the system will reboot automatically

Operations with the restore DVD 8610290001

The DVD 8610290001 is a bootstrap DVD, so inside there are all the files necessary to start automatically. At the reboot, after the modification of the BIOS parameters, the DVD will start the recovery procedure.

It will appear the following menu:

According the type of PC group inside the system, it will be necessary to select the recovery option.

Number	Used in units
1	Motherboard FOXCONN code 9102586000 IC=0
2	Motherboard FOXCONN code 9102572000/100 IC=0
3	Motherboard ASUS code 9102572000/100 IC=1
4	Motherboard DFI code 9102572000/100 IC=2 and 9102572600 IC=1

The table below summarize the various options:

Pushing one of the numbers the system will start automatically to erase the HDD and to reinstall all the XP software. This operation will take some minutes.

In case of warning messages of Ghost SW (message "license agreement warning") before starting to erase the HDD confirm the message with "OK".

At the end of the procedure will appear the following message.

Remove the recovery DVD from the drive and reboot the unit pressing <CTRL> <ALT>

Operations with the restore DVD 8610290002

The DVD 8610290002 is a bootstrap DVD, so inside there are all the files necessary to start automatically. At the reboot, after the modification of the BIOS parameters, the DVD will start the recovery procedure and will propose automatically two options:

- Press "1" to start the recovery (this option will recover both models code 9102572110 and 9102572610)
- Press "2" to exit the procedure without any recovery

Pushing the key 1, the recovery will start without any other request to confirm the procedure.

At the end of the procedure will appear the following message.

R:\>

Remove the recovery DVD from the drive and reboot the unit pressing <CTRL> <ALT>

Restore of the Bios setup

As soon as the system restarts push the key to restore the BIOS setup.

-Motherboard FOXCONN (code 9102586000 IC=0 and 9102572000/100/600 IC=0)

- 1. In case the unit requests a password write "laser"
- 2. In the main page using the arrows move to select the voice "Advanced BIOS Features" and press <Enter>
- 3. Move to the voice "First Boot Device" and push <Enter>
- 4. In the menu which will appear select the voice "Hard Disk" and push <Enter>
- 5. Press <F10> to leave the BIOS and save the setup answering "Y" at the question that will appear; push <Enter>; the system will reboot automatically

-Motherboard ASUS (code 9102572000/100 IC=1)

- 1. In case the unit requests a password write "laser"
- 2. In the page "MAIN" move with the arrows to select the voice "IDE configuration" and press <Enter>
- 3. Move to the voice "Onboard IDE Operate Mode" and push <Enter>
- 4. Move to the voice "Enhanced mode" and push <Enter>
- 5. Move to the voice "Enhanced mode support On" and push <Enter>
- 6. Move to the voice "P-ATA + S-ATA" and push <Enter>
- 7. Press <ESC> and using the arrows move to the menu "Boot" and select the voice "Boot Device Priority" and push <Enter>
- 8. Select the voice "1st boot device" and push <Enter>
- 9. Move to the description corresponding to the Hard Disk and push <Enter>
- 10. Press <F10> to leave the BIOS and save the setup moving to the voice "OK" of the menu that will appear; push <Enter>; the system will reboot automatically

-Motherboard DFI (code 9102572000/100 IC=2 and 9102572600 IC=1)

- 1. In case the unit requests a password write "laser"
- 2. In the main page using the arrows move to select the voice "Advanced BIOS Features" and press <Enter>
- 3. Move to the voice "First Boot Device" and push <Enter>
- 4. In the menu which will appear select the voice "Hard Disk" and push <Enter>
- 5. Press <F10> to leave the BIOS and save the setup answering "Y" at the question that will appear; push <Enter>; the system will reboot automatically

-Motherboard DFI LT600 (code 9102572110 IC=0 and 9102572610 IC=0)

- 1. In case the unit requests a password write "laser"
- 2. In the main page using the arrows move to select the voice "Advanced BIOS Features" and press <Enter>
- 3. Move to the voice "First Boot Device" and push <Enter>
- 4. In the menu which will appear select the voice "Hard Disk" and push <Enter>
- 5. Press <F10> to leave the BIOS and save the setup answering "Y" at the question that will appear; push <Enter>; the system will reboot automatically

Windows XP setup after recovery with DVD code 8610290001

When the unit will reboot will start the setup of the main SW.

Note: If the monitor show nothing, you have to turn off the MyLab and connect the monitor directly to the VGA video out of the computer (remember to disconnect the cable DVI between VGA video and PVA): this because the monitor doesn't recognize the correct resolution. Open Control Panel-Display-Settings, to set Screen Resolution at 1024 x 768 and Color quality at 32 bit, then press Advanced-Monitor, and set Screen refresh rate at 60 Hz. After this turn off the MyLab and set all the cable in the right position, and so you are able to finish the setup.

- 1. In the page "Welcome to Microsoft Windows" select the icon "Next" (in the lower right side)
- 2. In the page "What time zone are you in?" select the right time zone and check the checkbox for the voice "Automatically adjust clock for daylight saving time"; after press "Next"
- 3. In the page "The End User License Agreement" select the voice "Yes, I accept" and click "Next"
- 4. In the page "Help protect your PC" select the voice "Not right now", then "Next"
- 5. In the page "What's your computer's name?" set the unit name (the factory default is <unit name>_<s/n unit> i.e. 6100 for MyLab Gold Platform and 6150 for MyLab 70, i.e. 6150_0065), leave the field "Computer description" empty, then "Next"
- 6. In the page "What's your Administrator password?" set the password "laser" and click "Next"
- 7. In the page "Is this computer in a domain?" select "No, don't make this computer part of a domain" then "Next
- 8. In the page "How will this computer connect to the Internet?" select "Skip" and do not set any value
- 9. In the page "Ready to register with Microsoft?" select the voice "No, not at this time", then "Next"
- 10. In the page "Who will use this computer?" set in the field "Your name" the name "Esaote", then "Next"
- 11. In the page "Thank you!" click on "Finish", Windows will reboot.

- 12. In the page of login of Windows press two times the keys <Ctrl><Alt>, in the menu that will appear set the User Name as "Administrator" with the password "laser" and click on the key "OK"
- 13. If it will appear the message "Your password expires today. Do you want to change it now? " select "NO"
- 14. If will appear a "Soundmax" window, check the checkbox "don't detect new audio device in the future" and confirm with OK.
- 15. Push the key "Cancel" in all the menu "Found New Hardware Wizard" that will appear
- 16. In the menu "Start" select the voice "Settings" and then "Control Panel" and double click on the icon "Administrative Tools" and then "Computer Management"
- 17. In the menu in the left part select the voice "Local Users and Groups" and in the right part double click on "Users"
- 18. In the right part go to the voice "Esaote" and open the menu with a click on the right key of the system, select "Delete" and click the key "Yes" in the menu that will appear
- 19. Always in the right menu select the voice "Administrator" and open the menu with a click on the right key of the system and select "Properties"
- 20. In the menu that will appear disable the voice "User must change password at next logon" and enable the voice "Password never expires", press the key "apply" and then "OK" Close all the menu and reboot the unit.

Windows XP setup after recovery with DVD code 8610290002

When the unit will reboot will start the setup of the main SW.

Note: If the monitor show nothing, you have to turn off the MyLab and connect the monitor directly to the VGA video out of the computer (remember to disconnect the cable DVI between VGA video and PVA): this because the monitor doesn't recognize the correct resolution. Open Control Panel-Display-Settings, to set Screen Resolution at 1024 x 768 and Color quality at 32 bit, then press Advanced-Monitor, and set Screen refresh rate at 60 Hz. After this turn off the MyLab and set all the cable in the right position, and so you are able to finish the setup.

- 1. In the page "Welcome to Microsoft Windows" select the icon "Next" (in the lower right side)
- 2. In the page "The End User License Agreement" select the voice "Yes, I accept" and click "Next"
- 3. In the page "Help protect your PC" select the voice "Not right now", then "Next"
- 4. In the page "What's your computer's name?" set the unit name (the factory default is <unit name>_<s/n unit> i.e. 6100 for MyLab Gold Platform and 6150 for MyLab 70, i.e. 6150_0065), leave the field "Computer description" empty, then "Next"
- 5. In the page "What's your Administrator password?" set the password "laser" and click "Next"
- 6. In the page "Who will use this computer?" set in the field "Your name" the name "Esaote", then "Next"
- 7. In the page "Thank you!" click on "Finish", Windows will reboot.
- 8. In the page of login of Windows press two times the keys <Ctrl><Alt>, in the menu that will appear set the User Name as "Administrator" with the password "laser" and click on the key "OK"
- 9. If it will appear the message "Your password expires today. Do you want to change it now? " select "NO"
- 10. If will appear a "Soundmax" window, check the checkbox "don't detect new audio device in the future" and confirm with OK.
- 11. Push the key "Cancel" in all the menu "Found New Hardware Wizard" that will appear

- 12. In the menu "Start" "Control Panel" and double click on the icon "Administrative Tools" and then "Computer Management"
- 13. In the menu in the left part select the voice "Local Users and Groups" and in the right part double click on "Users"
- 14. In the right part go to the voice "Esaote" and open the menu with a click on the right key of the system, select "Delete" and click the key "Yes" in the menu that will appear
- 15. Always in the right menu select the voice "Administrator" and open the menu with a click on the right key of the system and select "Properties"
- 16. In the menu that will appear disable the voice "User must change password at next logon" and enable the voice "Password never expires", press the key "apply" and then "OK" Close all the menu and reboot the unit.

MyLab SW setup 6.XX

Follow this procedure to install the MyLab Software release after the recovery procedure.

- 1. At the startup press the key to enter in the BIOS and check if the option **Hyper-Threading Technology** in the menu *Advanced BIOS Features* is present and disabled. In case disable it. Save the bios and reboot the system. In case is not present skip this point.
- 2. Log in the system as *Administrator* password *laser* by pressing two times the keys "CTRL+ALT+DEL".
- 3. When Windows XP start, press Cancel in order to ignore all the requests to install drivers that will appear.
- Open Control Panel → System → Tab Hardware → Device Manager
 → Network Adapters; if the card is Realtek RTL 8139/810x Family Fast
 Ethernet NIC, follow the procedure described in the paragraph "Updating driver for Network card Realtek RTL8139/810x Family Fast Ethernet NIC"
- 5. Open Control Panel → System → Hardware → Device Manager click on "Sound, video and game controllers" and check if Hauppage WinTV 878/9 WDM Video Driver is present. If not uninstall the old driver launching hcwclear.exe in the folder Service\Drivers\Grabber\Hauppage WinTv and choosing the complete uninstallation; at the end reboot the system. When the system restarts ignore all the requests to install drivers that will appears and launch wdm346_23061.exe in the folder Service\Drivers\Grabber\Hauppage

WinTv. Reboot the system and when the system restarts accept the automatic installation of the detected Hauppage peripherals.

- 6. Install the version of Nero Burning Room enclosed in the installation disk following the procedure described in the paraghaph "Updating Nero to version 7.5".
- 7. Install the program for the login management running **Esaote.Gina.Setup.msi** in the folder **Biolab_tools\GINA**. Insert the service USB key in the first of the two USB ports in the front side. Wait till the system recognize the key, choose refuse the research on internet and accept the automatic installation. Wait for the installation of the driver. Extract the key and insert it in the second USB port and repeat the previous steps.
- 8. Run **setup.exe**. Master Setup will start copying all the installation file in the local disk. It take few minutes. NOTE: This operation require 5 GB of free space.
- 9. The system requires if you want proceed with the installation: press "OK, Continue". Be sure to have a backup of the archive before to continue. From this moment you can remove the installation disk. Do not remove the USB service key.
- 10. Master Setup will start checking the integrity of the files in the installation disk. It take few minutes.
- 11. If an older software version is found, the system automatically reboot.
- 12. The uninstallation of the old software and the installation of the new one starts.
- 13. When SVG Software require the installation, click YES and accept the Software License Agreement; close the window of internet explorer when requested. It is possible that in this phase of installation an "Information Bar" window message appears, if this happens click OK, then in the Internet Explorer window click on the yellow bar ("To help protect your security, Internet Explorer has restricted this file from showing active content that could access your computer. Click here for options...") this action opens a menu, choose "Allow Blocked Content..." then confirm with YES accept the Software License Agreement; close the window of internet explorer when requested.
- 14. The installation continues: confirm all the default options and when appear the "Hardware Installation" windows related to the "Cygnal USB composite" and CP2101 USB to UART Bridge Controller" click on "Continue anyway".
- 15. The system reboot and starts the Security Update; it take several minutes.
- 16. At the end of the installation the system automatically reboots.

17. When the system reboots check the monitor resolution and frequency. Open Control Panel → Display → Settings. Screen resolution must be 1024 x 768 and Color quality 32 bit. Press Advanced → Monitor, Screen refresh rate must be 60 Hz.
NOTE The setup of the system automatically install the driver for ATI Video

Board, but in very few cases this installation presents malfunctioning (i.e. icons disappear or the resolution is 640x480). If something like that happens it is necessary to update the driver for ATI Video Board manually following the procedure described in the paraghaph "Updating drivers for ATI Video Board".

- 18. If the system is equipped with Virtual Navigator follow the procedure described in the paragraph "Updating VGA driver for equipments with Navigator".
- 19. After the installation double click on the start icon to run the software, the FW is updated and at the end the MyLab Software starts.
- 20. Remove the USB key and enter as echouser

At start of the software the update of the firmware will be done if required. If the PVA or/and PLC or/and BLC have to be updated a switch off of the machine will be automatically performed. In this case a manual switch on shall be done.

VIRTUAL NAVIGATOR UPDATING/INSTALLING

Refer to section 9 for the Virtual Navigator setup procedure.

Updating driver for ATI Video Board

Uninstall the old drivers opening Control Panel \rightarrow Display \rightarrow Settings \rightarrow Advanced \rightarrow Adapter \rightarrow Properties \rightarrow Driver and pressing Uninstall, then reboot the system. When the system restarts a message asking the driver appears, browse for the correct path in the folder.

Service\Drivers\VGA\ATI_8.383_06132007 or in the subfolder B_48879. Once the system find the driver confirm, then the system automatically reboot. When the system restarts check the monitor resolution and frequency. Open Control Panel → Display → Settings. Screen resolution must be 1024 x 768 and Color quality 32 bit. Press Advanced → Monitor, Screen refresh rate must be 60 Hz

Updating driver for Network card Realtek RTL8139/810x Family Fast Ethernet NIC

 $\begin{array}{l} \mathrm{Open} \ \textbf{Control} \ \textbf{Panel} \rightarrow \textbf{System} \rightarrow \textbf{Tab} \ \textbf{Hardware} \rightarrow \textbf{Device} \ \textbf{Manager} \rightarrow \textbf{Network} \ \textbf{Adapters} \end{array}$

Select the card **Realtek RTL 8139/810x Family Fast Ethernet NIC** and double click with left button, check that driver date and driver version are respectively different from 12/12/2006 and 5.663.1212.2006, in this case press **Update Driver...**, select the option No, not this time \rightarrow NEXT select the option Install from a list or specific location \rightarrow NEXT select the option Include this location in the search \rightarrow BROWSE, select the SW Pack directory service\DRIVERS\NETWORK\Realtek_5.663.1212.2006 and confirm.

Wait the end of installation and press Finish, then close all opened windows.

Updating Nero to version 7.5

In the installation disk of the release 5.03 (code 8610293026 or 8610294026), access the folder...

In the installation disk, access to the folder **\Service\Nero_7_5\CDS\Nero** and run **setupx.exe** to start the installation.

- 1. Press the **Nero 7 essentials** button and, if required, accept to uninstall the old version of Nero clicking OK.
- 2. Click OK when the system ask to reboot, the system doesn't reboot but it continues the installation. Press NEXT.
- 3. Accept the license agreement and press NEXT.
- 4. Customer Information window, press NEXT.
- 5. Select the option CUSTOM as Setup Type and press NEXT.
- 6. In language selection English is selected by default, press NEXT.
- 7. In the dialog custom setup window about the list of modules to install, select all modules except NeroBackupIt, Nero CoverDesigner and InCd. To exclude an item, click on it and select "This feature will not be available". Press NEXT.
- 8. Press INSTALL.
- 9. When the option window appear, press Remove all then NEXT.

- 10. Press Finish.
- 11. Restart the system.
- 12. After rebooting if in the Windows application bar a Nero Search icon is displayed, click on the arrow near the icon to open Nero search option window. Press the Option button and deselect "Integrate Nero Search into the Taskbar" and "Integrate Nero Scout in Windows Explorer". Press OK and close Nero Search window.
- 13. Open Nero clicking on Start → Programs → Nero 7 Essentials→ Nero StartSmart Essential. Select Tools and go in Nero Product Setup press NO when the system ask "Would you like to allow Nero ProductSetup to check for updates of your installed Nero products?", then deselect "Check for updates" and press OK. Confirm to quit pressing YES. Close Nero.
- 14. Run the program DMA Manager of Nero (Start → Programs → Nero 7 Essentials → Tools → Nero DMA Manager) and enable the DMA access for all the CD/DVD drives installed in the system.

Updating VGA driver for equipments with Navigator

Open Control Panel → Display → Settings → Advanced → Adapter

- If the Adapter Type is "RADEON 9600 Series" or "RADEON 9550 / X1050 Series"
 - a. Uninstall the current drivers running cat-uninstaller.exe in the folder Service\Drivers\VGA\Radeon9600_v5_8. Continue till the request of removing, choose Remove, then click Next and REMOVE. Wait for the end of uninstallation and reboot the system. Ignore any error displayed.
 - b. Install the driver version 8.162.0.0. During this phase the graphic resolution is very low, do not mind it and press Cancel in order to ignore all the requests to install drivers that will appear.

Run 5-8_xp-2k_dd_ccc_wdm_enu_25203.exe in the folder Service\Drivers\VGA\RADEON9600_V5_8. If "Security Warning" appears click RUN. Accept the default installation folder, accept the License Agreement and choose Express. Reboot the system and if "ATI Registration Choice" window appears choose Never remind me and click OK

- If the Adapter Type is "RADEON X1550"
 - a. Open Properties → Driver, press button Update Driver..., select the option No, not this time and press NEXT then select the option Install from a list or specific location and press NEXT.
 Select the option Include this location in the search and press BROWSE, select the SW Pack directory service\DRIVERS\VGA\ATI_8.493_05122008 and confirm.
 - b. Wait the end of installation, press **Finish** and reboot.
 - c. At restart, start executable **agp-hotfix_xp32_63478.exe** in the SW Pack directory **service\DRIVERS\VGA\ATI_8.493_05122008\ HotFix AGP**.

NB: the language of this installation depends on regional settings set on the equipment

Accept the default installation folder, accept the License Agreement, choose **Custom** installation and confirm, remove option **Catalyst Control Center**, select option **ATI Display Driver** and confirm. Press **Continue Anyway** when requested. Wait the end of installation and then reboot the system.

Check the monitor resolution and frequency. Open Control Panel \rightarrow Display \rightarrow Settings. Screen resolution must be 1024 x 768 and Color quality 32 bit. Press Advanced \rightarrow Monitor, Screen refresh rate must be 60 Hz.

SET THE MONITOR PRESET

In order to uniform the performances of the monitors used with MyLab70 (LCD 19", LCD 21" or CRT), different post processing maps have been created to each of them.

Once the model has been defined, select the correct monitor type in the service menu of your unit.

Open Menu \rightarrow Service \rightarrow Settings \rightarrow Monitor and select:

- XCRT when the monitor is the CRT LG 17" (cod. 9102854000)
- XVISION when the monitor is the LCD EIZO 19" ColorEdge CG19 (cod. 9103019000)
- XVISION W when the monitor is the LCD EIZO 21" ColorEdge CG210 (cod. 9103021000)
- EA700-F (not used, do not select it)
- EA700-F SAT when the monitor is the LCD EIZO 19" EA700-F (cod. 9103019000)

The last two items have been added because LCD 19" monitor EIZO CG19 will be replaced by a new LCD model EIZO EA700 for obsolescence reason. When the new monitor will be introduced a specific Technical Note will be released, however be informed that from the 6.01 the system menu already lists the new monitor model.

The Esaote code will remain the same for both the models (9103019XXX).

61XX - SERVICE MANUAL

Chapter

1 - Preventive Maintenance

This section is intended to specify the recommended frequency to perform a Preventive Maintenance to the MyLab systems.

Periodic maintenance provides significant contribution to ongoing reliability and performance of the system.

The minimum frequency of PM (Preventive Maintenance) inspection is one per year, unless the operating environment conditions suggest more inspection during the year.

Anyway it is recommended to perform a PM inspection:

- Periodically. This period may vary from 3 months to 6 months, depending upon the operating environment.
- Following a customer request.

Tools

Tool Standard Service Tools Service Manual Doppler Phantom (if available)

Procedures

- 1. Ask the customer for any complain he may have, and discuss about the performances of the system. Note any problem or suggestion in the COMMENTS section of the checklist. Note the actions taken to solve the problems.
- 2. Visually inspect the unit, following the steps below:
 - a) Visual inspection of the main unit, including the plastics, the connectors in the back, the CD/DVD drives, the peripherals and the connectors for the probes.
 - b) Visual inspection of the monitor, including the controls keys for the external adjustments, the plastic, the video and cables.

- c) Visual inspection of the display group, including the software keys, the plastic and the video.
- d) Visual inspection of the wheels, the foot brakes. Verify the stability of the whole system.
- e) Visually inspect the whole system for biohazard presence. Take the necessary action if biohazard presence is suspected. If not sure, treat the system as infected.
- f) Inspect the mechanical integrity of the system.
- g) Check the manoeuvrability of the keyboard by rotating it; check the block of the keyboard.
- h) Check the manoeuvrability of the column and the block by moving it up and down.
- i) Check the manoeuvrability of the monitor by moving it. In case of articulated monitor arm, check the monitor stay in place and the movement is easy.
- 3. Check all the installed electric power cables and look for any sign of wear or similar damage. Replace them in case of need.
- 4. Switch the system on and verify the following:
 - a) The unit boots correctly without messages of error. The overlay graphics must be displayed in the right way on the monitor. All the probes are recognized in the right way.
 - b) Perform a scan using an electronic transducer and look for a uniform, noise free image. Take any appropriate action to make the system operate properly.
 - c) Check the system time and date, and modify them, if necessary.
 - d) Check the picture quality on the screen. In particular the picture must not present picture defects, distortions, unstableness, color fault.
 - e) Check the correct working of the keyboard's key.
 - f) For the biopsy (if present) the following verifications (that must be done immersing the probe in the water) are recommended after the biopsy kit and/or the probe have a mechanical shock and whenever the user considers it necessary for the patient's safety:
 - Verify the needle-guide lies on the scan-plane of the probe verifying that the biopsy needle, inserted in the guide, is visible in

the ultrasound image in the whole depth of the field of sight of the probe.

- Verify that the position and the angle of the insertion of the biopsy needle correspond to the ones expected in the biopsy procedure.
- g) Switch the system off. Remove the power supply cord.
- 5. Remove the plastic and metallic panels and look for any dirty and dust; if found, remove it.
- 6. Inspect all the internal cables (insertion, damages, scratches); clean the dust.
- 7. Check all the fans (ten fans: one located on the processor, one over the PC group and eight in the lower fan group) and clean them. If they are damaged replaced them.

CAUTION If a fan is damaged, the system cannot be used till the broken fan is replaced.

- 8. Extract all the PCBs and remove any dirty or dust. Look in the internal part of the metallic basket and remove any dirty or dust. For the operation of removing and handling of the boards, it is necessary to follow all precautions against the electrostatic discharges.
- 9. Insert again all the PCBs, paying attention that they must be properly seated. Place also all the cables. Close the main frame.
- 10. Open the keyboard zone and remove any dirty or dust from connectors and boards.
- 11. Clean the trackball, and try to move it in order to be sure that it can slide freely.
- 12. Close the keyboard zone.
- 13. Verify the external fuses. Clean all the sockets.
- 14. If are present, remove all the installed peripherals and clean them ; after connect the peripherals again. Check the cables of connection of the peripherals.
- 15. Remove any dirty or dust from all the transducers, check their cables (if they are damaged or scratched). In case remove them.

- 16. Check the connection of the video cable of the monitor.
- 17. Connect the power cord and switch the unit on. Check that it starts correctly.
- Check if all the transducers are recognized in the right way, then perform some scans with each of them.
 Test the BW, M, PW, CW and CFM functioning modes, using a phantom (if available). Test all the peripherals, making pictures using each one of them.
 Correct any abnormal situation that comes out.
- 19. Switch the system off.
- 20. Discuss with the customer for any complain he may have, and do what it is possible to solve the referred problems. Take note of each complains, of each problem and of the consequent actions performed.

Note

For all these operations please refer to the section 2 of this Service Manual.

Articulated monitor arm adjustment

The articulated monitor arm is designed to adjust quickly and easily according to the user needs.

Lift up and down

If the monitor does not stay in place or movement is stiff, tension needs adjustment. Adjust until motion is equal.





- To increase tension, turn clockwise
- To decrease tension, turn counterclockwise

CAUTION

Do not overtighten fasteners. Overtightening may cause damage to the equipment.

Tilt - forward and backward

If the monitor does not stay in place or movement is stiff, tension needs adjustment. Adjust until motion is equal.



- To increase tension, turn clockwise
- To decrease tension, turn counterclockwise

Do not remove screw. Removing screw may cause damage to the equipment.

CAUTION

Trackball Cleaning

We recommend this maintenance procedure be carried out once a year

Tools

Tool	Dimension
Allen screwdriver	3 mm
Phillips electric screwdriver	Medium and Small tip
Straight head screwdriver	Small tip
Paintbrush	-

Removal procedure

- Remove the keyboard group.
- Remove the trackball.
- Unscrew the three Philips head screws shown in the below picture.
- Remove the ball and clean it.
- Clean the encoders with a paint brush (Do not use a cleaning spray!).



• Reassemble the trackball.

Be careful to the parts sensible to the electrostatic discharges.

ΝΟΤΕ

61XX - SERVICE MANUAL

Chapter

2 - Safety Test

Every 61XX unit complies with EN60601-1 (IEC 60601-1) standard. The 61XX is Class I Type B and BF (Ultrasound probe) and CF (ECG) applied parts.

We strongly recommend performing Safety Tests every time new peripherals are powered through the cart or you had to replace any of the following parts:

- Power Supply Group (SPSR, SPS, Main Power)
- PSE board (ECG connector)
- Power Supply Plug

Anyway we suggest repeating the safety tests every two years. If the system is used in the Intensive or Coronary Care, we suggest repeating the safety tests once a year.

WARNING

Whenever the measured values exceed the reference ones (see the following table) don't use the unit and send it to ESAOTE

The parameters to be tested are the following:

- Impedance of Protective Earth Connection
- Earth Leakage Current
- Enclosure Leakage Current
- Patient Leakage Current
- Patient Auxiliary Current

This chapter defines safety Parameters and their range according to EN60601-1 standard and describes the safety tests to be carried out on the equipment.

Definitions

1) Impedance of Protective Earth Connection

The impedance between the Protective Earth (PE) terminal of the mains input connector and any accessible metal part.

2) Earth Leakage Current

The current that flows from the mains terminals (P=Phase, N=Neutral) to the Protective Earth (PE) through the insulation.

3) Enclosure Leakage Current

The current that flows between the enclosure and the Protective Earth (PE) terminal.

4) Patient Leakage Current

The current that flows through the applied parts (ECG and US probe) towards the Protective Earth (PE).

5) Patient Auxiliary Current

The current that flows between two different applied parts (for instance between two ECG electrodes).

The table below provides the user with a list of the parameters to be checked, the maximum values and references to the IEC 60601-1 standard (1988), II Edition.

Parameter	Max Value N.C.	Max Value	EN 60601-1
		S.F.C.	
Impedance of protective earth connection (with	0.2 Ω	-	18.f
Mains Power cable)			
Earth leakage current	0.5 mA	1 mA	19.4.f
Enclosure leakage current	0.1 mA	0.5 mA	19.4.g
Patient leakage current	CF 0.01 mA ac	CF 0.05 mA ac	19.4.h
	B/BF 0.1 mA ac	B/BF 0.5 mA ac	
Patient leakage current	-	CF 0.05 mA	19.4 h
(mains on applied part)		BF 0.5 mA	
Patient auxiliary current	CF 0.01 mA	CF 0.05mA	19.4.j
	B/BF 0.1 mA	B/BF 0.5 mA	

N.C. Normal Condition S.F.C. Single Fault Condition

ΝΟΤΕ

The test must be carried out by skilled personnel using equipment compliant with the reference standard indicated. ESAOTE recommends the use of the automatic BIO-TEK 601-PRO equipment manufactured by BIO-TEK Instruments INC. (www.biomedequip.com) or equivalent equipment.

61XX safety test - Operating Procedures

Tools

Tool	Dimension
BIOTEK 601 Pro or equivalent	-
Metal foil	maximum size 20 x 10 cm

ΝΟΤΕ

Before proceeding with the safety test, be sure of the equipment calibration.

Procedure

• Power the automatic testing equipment through mains supply and the equipment under test through the automatic equipment, as shown in the Fig.1



- The ECG cable must be connected to the 61XX ECG connector (if present) and the Applied parts terminals in the automatic equipment (see Fig.1).
- Set the automatic equipment according to its user manual in order to perform a Class I, Type CF equipment test..

Measurement of the Impedance of Protective Earth connection

- Connect the test lead to 61XX equipotential node.
- Activate the procedure for measuring the Impedance of Protective Earth on the automatic equipment.
- Check that the value indicated complies with the indications given in the reference table for normal condition (NC).

If the measured value is higher than the value in the table, do not use the equipment and send to ESAOTE.

Measurement of Earth leakage current

CAUTION

In all the conditions in which it is necessary power on the MyLab system press the pause key immediately after the power on button in order to avoid the Widows start up. This operation is very important in order to avoid data loss and hard disk damages.

• Activate the procedure for measuring the earth leakage current on the automatic equipment:

1.1 Check that the value indicated complies with the indications given in the reference table for normal condition (NC).

1.2 Repeat the procedure simulating a break in a power conductor, by means of the automatic equipment, and check that the value indicated complies with the indications given in the reference table for the single fault condition (SFC).

• Repeat the above measurement procedures inverting the polarity of the power conductors, by means of the automatic equipment

If any measured value is higher than the value in the table, do not use the equipment and replace the power cable. Repeat the procedure with the new cable and if the values continue to be higher, send the equipment to ESAOTE.

Measurement the Enclosure Leakage Current

CAUTION

In all the conditions in which it is necessary power on the MyLab system press the pause key immediately after the power on button in order to avoid the Widows start up. This operation is very important in order to avoid data loss and hard disk damages.

• Connect the test lead to the metal foil.

1.1 Place the metal foil in close contact with the unit and activate the procedure for measuring the enclosure leakage current on the automatic equipment; varying the foil position, check that the value indicated complies with the indications given in the reference table for the normal condition (NC)

1.2 Repeat the procedure simulating a break in the earth wire, by means of the automatic equipment, and check that the value indicated complies with the indications given in the reference table for the single fault condition (SFC).

1.3 Repeat the procedure simulating a break in a power conductor, by means of the automatic equipment, and check that the value indicated complies with the indications given in the reference table for the single fault condition (SFC).

• Repeat the above measurement procedures inverting the polarity of the power conductors, by means of the automatic equipment.

If any of the measured values are higher than the value in the table, do not use the equipment and send it to ESAOTE.

Measurement the Patient Leakage Current (ECG cable)

• Insert the ECG cable leads in the applied parts terminals in the automatic equipment.

1.1 Activate the procedure for measuring the Patient leakage current on the automatic equipment and check that the value indicated complies with the indications given in the reference table for the normal condition (NC).

1.2 Repeat the procedure simulating a break in the earth wire, by means of the automatic equipment, and check that the value indicated complies with the indications given in the reference table for the single fault condition (SFC).

1.3 Repeat the procedure simulating a break in a power conductor, by means of the automatic equipment, and check that the value indicated complies with the indications given in the reference table for the single fault condition (SFC). 1.4 Repeat the procedure simulating the application of the mains voltage, by means of the automatic equipment, to the plugs on the patient cable and check that the value indicated complies with the indication given in the reference table for the single fault condition (SFC).

- Repeat the above measurement procedures inverting the polarity of the power conductors, by means of the automatic equipment.
- If any of the measured values are higher than the value in the table, do not use the equipment and replace the ECG patient cable. Repeat the procedure with the new cable and if the values continue to be higher, send the equipment to ESAOTE.

Measurement the Patient Auxiliary Current

- Activate the procedure for measuring the patient auxiliary current on the automatic equipment and check that the value indicated complies with the indications given in the reference table for the normal condition (NC).
- Repeat the procedure simulating a break in the earth wire, by means of the automatic equipment, and check that the value indicated complies with the indications given in the reference table for the single fault condition (SFC).
- Repeat the procedure simulating a break in a power conductor, by means of the automatic equipment, and check that the value indicated complies with the indications given in the reference table for the single fault condition (SFC).
- Repeat the above measurement procedures inverting the polarity of • the power conductors, by means of the automatic equipment.

If any of the measured values are higher than the value in the table, do not use the equipment and replace the ECG patient cable. Repeat the procedure with the new cable and if the values continue to be higher, send the equipment to ESAOTE.

The defective patient cable or power cable must not be used

WARNING
Probe safety tests

For any probe in use with the unit, repeat the procedure for measuring the Patient Leakage Current test (without application of mains voltage on applied part), wrapping the probe enclosure with the metal foil and connecting the test lead to it. The test must be performed in any Real Time mode application. The probe must be connected to the unit

1.1 Activate the procedure for measuring the Patient leakage current on the automatic equipment and check that the value indicated complies with the indications given in the reference table for the normal condition (NC).

1.2 Repeat the procedure simulating a break in the earth wire, by means of the automatic equipment, and check that the value indicated complies with the indications given in the reference table for the single fault condition (SFC).

1.3 Repeat the procedure simulating a break in a power conductor, by means of the automatic equipment, and check that the value indicated complies with the indications given in the reference table for the single fault condition (SFC).

Repeat the above measurement procedures inverting the polarity of the power conductors, by means of the automatic equipment.

If any of the measured values are higher than the value in the table, do not use the probe and send it to ESAOTE.

WARNING

Any break in the probe case or in the probe cable can cause an electrical hazard. Do not use the probe and send it back to ESAOTE for repair.

61XX - SERVICE MANUAL

Chapter

1 - General Rules for Exchanging Information

Whenever the field service engineer requires support to the central service for solving a problem in the field, there are a minimum amount of information that must be provided both to correctly identify the problem and to speed up its solution:

- Serial Number of the defective unit.
- System Info.
- A picture of the defect with a description of it.
- Log files.

The System Info

The System Info option displays the system's software version and the main software version.

Procedure

• Press **MENU** and select "SYSTEM INFO".

The error files

The error files for the MyLab 60/70/70 X-Vision and 70 XVG are all available in the DIR "Esatmp" present in the root of the disk.

Inside there are several files, but for a check of a possible problem the files to analyze are:

"Echos_logXXX.log" and sometimes the "Platformsetup.log"

they are readable by using a text editor (i.e. "WordPad"). The "Echos_log" is a file that is created every time the system starts and closed when the unit is turned off.

In the dir. are stored around 100 Echos_log files and, as soon as the system generates the new ones, the old are automatically deleted.

The "Platformsetup" is a file which is generated the first time the SW is installed in the unit and then is updated at every SW installation.

This is useful to understand if there is a wrong installation (for example the SW of the 70 XVG installed in a MyLab 60 or vice versa)

The "Echos_log" files doesn't contain any information in case of image problem. In this case it's always necessary to send an image, with a detailed description. They are necessary in situations where the unit is hanged with a system error message.

How to download the errors files

procedure.

The files are accessible both as administrator (both the ways) and as user.

Procedure as user Press the MENU key and select "SYSTEM INFO". Insert an USB pen drive. Press "EXPORT LOG FILE TO USB". If the software of MyLab cannot start will be impossible to access to the "SYSTEM INFO". In this case it is possible to access to the error files named "Echos:logxxx.log" and stored in "C:\Esatemp" folder following the next

Procedure as administrator

- Switch the unit on using the service key.
- Access the folder "C:\Esatmp".
- Copy the files or the complete "Esatmp" folder on an USB pen drive.

In the same folder there is another file named "platformsetup.log" which summarize the result of every SW installation in the unit. This file is useful in case of problems during the setup to understand which is the defective process, or if a mistake has been done.

How to read the error files, structure of the Echos_log

The "Echos_log" is not only a report of the problems appeared, so are present also general info about the processes which are activated.





SECTION 7

13:39:46.468 Executor: Vga Period:16666 [us] 13:39:47.687 Gws : Searching analog input for Hauppauge WinTV Capture 13:39:47.687 Gws : Found analog input for Hauppauge WinTV Capture 13:39:50.640 Gws : Found Hauppauge WinTV Capture 13:40:01.171	Check on VGA board PC group and SW correlated
Hardware configuration I-Button: 36-da71335-01 Stot:[BLC] Error Code:[X00] Hardware Code: Model:6100,Comp:1,Rev:0, Dsp:TMS5502 Firmware Code: Ver:1,Rev:0,Build:169 Pid Code: Ver:0,Rev:0,Build:3 Stot:[BSC] Error Code:[X00] Hardware Code: Model:6100,Comp:0,Rev:0, Dsp:TMS6713 Firmware Code: Ver:0,Rev:0,Build:76 Pid Code: Ver:0,Rev:0,Build:1 Stot:[DEP] Error Code:[X00] Hardware Code: Model:6100,Comp:0,Rev:0, Dsp:TMS6713 Firmware Code: Ver:0,Rev:0,Build:3 Stot:[DCP] Error Code:[0x0] Hardware Code: Ver:0,Rev:0,Build:25 Pid Code: Ver:0,Rev:0,Build:25 Pid Code: Ver:0,Rev:0,Build:13 Stot:[DIP] Error Code:[0x0] Hardware Code: Model:6100,Comp:1,Rev:0, Dsp:TMS6713 Firmware Code: Ver:0,Rev:0,Build:25 Pid Code: Ver:0,Rev:0,Build:25 Pid Code: Ver:0,Rev:0,Build:13c Pid Code: Ver:0,Rev:0,Build:2 Stot:[DIP] Error Code:[0x0] Hardware Code: Model:6100,Comp:2,Rev:0, Dsp:TMS5502 Firmware Code: Ver:0,Rev:0,Build:25 Pid Code: Ver:0,Rev:0,Build:2 Stot:[IMC] Error Code:[0x0] Hardware Code: Model:6100,Comp:2,Rev:0, Dsp:TMS5502 Firmware Code: Ver:0,Rev:0,Build:257 Pid Code: Ver:0,Rev:0,Build:2 Stot:[IMC] Error Code:[0x0] Hardware Code: Model:6100,Comp:2,Rev:0, Dsp:TMS5502 Firmware Code: Ver:0,Rev:0,Build:2 Stot:[IMC] Error Code:[0x0] Hardware Code: Model:6100,Comp:2,Rev:0, Dsp:TMS5502 Firmware Code: Ver:0,Rev:0,Build:2 Stot:[IMC] Error Code:[0x0] Hardware Code: Model:6100,Comp:2,Rev:0,Dsp:TMS5502 Firmware Code: Ver:0,Rev:0,Build:2 Stot:[TR1] Error Code:[0x0] Hardware Code: Ver:0,Rev:0,Build:2 Stot:[TR1] Error Code:[0x0] Hardware Code: Ver:0,Rev:0,Build:2 Stot:[TR1] Error Code:[0x0] Hardware Code: Model:6150,Comp:0,Rev:0 Firmware Code: Ver:0,Rev:0,Build:0 Stot:[TR3] Error Code:[0x0] Hardware Code: Ver:0,Rev:0,Build:0 Stot:[TR4] Error Code:[0x0] Hardware Code: Ver:0,Rev:0,Build:0 Stot:[TR4] Error Code:[0x0] Hardware Code: Model:6150,Comp:0,Rev:0 Firmware Code: Ver:0,Rev:0,Build:0 Stot:[TR4] Error Code:[0x0] Hardware Code: Ver:0,Rev:0,Build:0 Stot:[TR4] Error Code:[0x0	 "Hardware configuration" check This is a check of the boards performed during the boot of the unit. As soon as the unit starts, the BLC and the IMC start to check the boards present, the HW version and if there are errors. The BLC make this operation on the back end (DIP, DCP, BSC, DEP) and on the IMC. After this operation from the BLC, the IMC will program the ITRs, the ICC and the ICS. When all the operations are completed the probe selection menu will appear on the screen and the unit will start to work. In case all is OK the field "Error Code" remains 0s0, in case of problems there will be something different. Usually the broken part is the board which shows the error , but not always is true. For more detailed in the field error code and see the related table (SEE POINT "HARDWARE" CONFIGURATION ERROR CODE DESCRIPTION"
Slot:[ITR5] Error Code:[0x0]	

Hardware Code: Model:6150,Comp:0,Rev:0 Firmware Code: Ver:0,Rev:0,Build:d6 Pld Code: Ver:0, Rev:0, Build:0 Slot:[ITR6] Error Code:[0x0] Hardware Code: Model:6150,Comp:0,Rev:0 Firmware Code: Ver:0.Rev:0.Build:d6 Pld Code: Ver:0,Rev:0,Build:0 Slot:[ITR7] Error Code:[0x0] Hardware Code: Model:6150,Comp:0,Rev:0 Firmware Code: Ver:0,Rev:0,Build:d6 Pld Code: Ver:0,Rev:0,Build:0 Slot:[ITR8] Error Code:[0x0] Hardware Code: Model:6150,Comp:0,Rev:0 Firmware Code: Ver:0,Rev:0,Build:06 Pld Code: Ver:0,Rev:0,Build:0 Slot:[ITR9] Error Code:[0x0] Hardware Code: Model:6150,Comp:0,Rev:0 Firmware Code: Ver:0,Rev:0,Build:d6 Pld Code: Ver:0,Rev:0,Build:0 Slot:[ITR10] Error Code:[0x0] Hardware Code: Model:6150,Comp:0,Rev:0 Firmware Code: Ver:0,Rev:0,Build:d6 Pld Code: Ver:0,Rev:0,Build:0 Slot:[ITR11] Error Code:[0x0] Hardware Code: Model:6150,Comp:0,Rev:0 Firmware Code: Ver:0,Rev:0,Build:d6 Pld Code: Ver:0,Rev:0,Build:0 Slot:[ITR12] Error Code:[0x0] Hardware Code: Model:6150,Comp:0,Rev:0 Firmware Code: Ver:0, Rev:0, Build:d6 Pld Code: Ver:0.Rev:0.Build:0 Slot:[ICS] Error Code:[0x0] Hardware Code: Model:6150,Comp:0,Rev:0 Firmware Code: Ver:0,Rev:0,Build:f Pld Code: Ver:0, Rev:0, Build:2 Slot:[SPR] Error Code:[0x0] Hardware Code: Model:6150,Comp:0,Rev:2 Firmware Code: Ver:ff,Rev:ff,Build:ffff Pld Code: Ver:0,Rev:0,Build:0 Pld Code: Ver:0,Rev:0,Build:6 Slot:[SPS] Error Code:[0x0] Hardware Code: Model:6100,Comp:0,Rev:1 Firmware Code: Ver:ff,Rev:ff,Build:ffff Slot:[BMB] Error Code:[0x0] Hardware Code: Model:6100,Comp:1,Rev:0 Firmware Code: Ver:ff,Rev:ff,Build:ffff Slot:[PVA] Error Code:[0x0] Hardware Code: Model:6100,Comp:0,Rev:0 Pld Code: Ver:1,Rev:0,Build:2c Slot:[PLC] Error Code:[0x0] Hardware Code: Model:6100,Comp:0,Rev:0 Pld Code: Ver:0, Rev:0, Build:3

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Here, after the probe selection, there is the location of the file where the system writes the DUMP of the internal location of memory. They are generated in case of problems that happen after the first boot procedure (the step indicated as "Hardware configuration check"). In case of problems, there will be a part of the file named :"FIRMWARE EQUIPMENT ERROR DETECTED". In this case will be necessary to check the information indicated.

18:13:38.484 18:13:38.546 18:13:38.593 18:13:38.593 18:13:38.609 18:13:38.640 18:13:38.640 18:13:38.640 18:13:38.671 18:13:42.593 18:13:43.656 18:13:43.656 18:13:43.657 18:13:43.687	Start: Quitting on command ShutDown Start: Shutdown request to 0xC453 Start: Shutdown request accepted by Gws.exe Start: Shutdown request accepted by Nti.exe Start: Shutdown request accepted by Vtr.exe Start: Shutdown request accepted by Ecom.exe Executor: Request to shutdown Message Received. Start: Shutdown request accepted by Executor.exe Start: Shutdown request accepted by Executor.exe Start: Shutdown request accepted by BioCom.exe Start: Shutdown request accepted by BioCom.exe Start: Shutdown quit received from BioCom.exe. Send Quit: 0xC453 Gws: Quit message received Executor: Quit Message Received. Gws: OnClose entry Ecom : Exit phase (PSD become invalid) Executor: Max 12c Time:17.3 [ms]	Start of the normal shutdown procedure by pressing the on/off key on the keyboard. After this point the error message doesn't show any useful information. Even if there is one error message is not one hanging of the system. After this point all the processes are down and the boards don't work anymore
18:13:43.734 18:13:44.000	Gws: DisconnectTolpc Exit EcoM: ProbeSelBck correctly saved.	
18:13:44.000	Ecom : Exit phase (WPD become invalid)	
18:13:44.156	EcoM: WaitProbeBck correctly saved.	
18:13:44.156	Ecom : Exit phase (HCD become invalid)	
18:13:44.593	EcoM: HwConfBck correctly saved.	
18:13:44.890	EcoM: StartUpBck correctly saved.	
18:13:45.093	Start: The Process Nti.exe has exited	
18:13:45.093	Ecom exit	
18:13:45.093	Ecom : Commands to cine Executed	
18.13.45.125	Ecom : Connector A: Application INIVALID: Factory Default INIVALID: User pre	set LA523 VAS CAR CAROTIDE hin
18.13.45 156	Start: The Process Khd exe has exited	
18:13:45.156	Start: The Process Vtr. exe has exited	
18:13:45.468	Start: The Process Ecom.exe has exited	
18:13:45.875	Start: The Process Executor.exe has exited	

18:13:46.031	Gws: OnClose exit
18:13:48.546	Start: The Process Gws.exe has exited
18:13:59.578	Start: Process BioCom.exe abnormal termination
18:13:59.828	Start: Process Esaote.Imaging.Dicom.Dinamo.Host.exe Killed
18:13:59.953	Start: Process Esaote.MediaExport.Host.exe Killed
18:14:00.062	Start: Process Esaote.MediaRec.Host.exe Killed
18:14:00.203	Start: Process Esaote.PrintDispatcher.Host.exe Killed
18:14:00.312	Start: Process Esaote.DataOrganizer.Host.exe Killed
18:14:00.421	Start: Process Esaote.Star.App.exe Killed
18:14:00.750	Start: Process Esaote.Star.App.exe Killed
18:14:00.953	Start: System is Down
18:14:00.968	Start: Shutdown required

In this case the unit doesn't show any problem.

How to read the error files, structure of the Platformsetup

Here below are listed all the info written in the file Platformsetup after one installation of a new SW release. Not all the data are important but, in case of wrong installation it's possible to find where there was the problem.



09/12/07 - 10:43:59 : -----09/12/07 - 10:44:00 : Updating security: OK 09/12/07 - 10:44:00 : Updating security: OK 09/12/07 - 10:44:00 : Master Setup v.2.7.1 09/12/07 - 10:44:00 : Equipment:MyLab70 Version:V 2.02 09/12/07 - 10:44:00 : automatic uninstallation 09/12/07 - 10:44:00 : SECURITYUPDATE: Uninstall Check 09/12/07 - 10:44:00 : 09/12/07 - 10:44:00 : SECURITYUPDATE: Uninstalling 09/12/07 - 10:44:00 : 09/12/07 - 10:44:00 : CODEC: Uninstall Check 09/12/07 - 10:44:00 : 09/12/07 - 10:44:00 : CODEC: Uninstalling 09/12/07 - 10:44:00 : 09/12/07 - 10:44:00 : ECHOS: Uninstall Check 09/12/07 - 10:44:00 : Warning: this package could order a reboot. 09/12/07 - 10:44:00 : 09/12/07 - 10:44:00 : ECHOS: Uninstalling 09/12/07 - 10:44:24 : Operating on key:DisplayName Operating on key:DO_NOTHING Execution of :MsiExec.exe /quiet /passive /x{2D1481AA-649B-427A-94E3-D4412A4DF649} 09/12/07 - 10:44:24 : SVG: Uninstall Check 09/12/07 - 10:44:24 09/12/07 - 10:44:24 : SVG: Uninstalling 09/12/07 - 10:44:24 09/12/07 - 10:44:24 : USDATA: Uninstall Check 09/12/07 - 10:44:24 : 09/12/07 - 10:44:24 : USDATA: Uninstalling 09/12/07 - 10:44:27 : Execution of :rd /S /Q C:\USDATA 09/12/07 - 10:44:27 : DRIVERS: Uninstall Check 09/12/07 - 10:44:27 09/12/07 - 10:44:27 : DRIVERS: Uninstalling 09/12/07 - 10:44:27 09/12/07 - 10:44:27 : BIOLAB: Uninstall Check 09/12/07 - 10:44:27 09/12/07 - 10:44:27 : BIOLAB: Uninstalling 09/12/07 - 10:44:27 09/12/07 - 10:44:27 : PREREQUISITES: Uninstall Check 09/12/07 - 10:44:27 : Execution of :rd /S /Q C:\MUST Current process failed:rd /S /Q C:\MUST Current process could continue anyway:rd /S /Q C:\MUST 09/12/07 - 10:44:27 : PREREQUISITES: Uninstalling 09/12/07 - 10:44:36 : ------09/12/07 - 10:44:36 : ------ Started:C:\TEMP\MASTERSETUP\sp_setup\must 09/12/07 - 10:44:36 : -----09/12/07 - 10:44:36 : Defaulting to local 09/12/07 - 10:44:36 : Updating security: OK 09/12/07 - 10:44:36 : Updating security: OK 09/12/07 - 10:44:36 : Master Šetup v.2.7.3 09/12/07 - 10:44:36 : Equipment:MyLab60/70 Version:V 3.01 09/12/07 - 10:44:36 : automatic installation 09/12/07 - 10:44:36 : BIOLAB: Performing check. 09/12/07 - 10:44:36 : 09/12/07 - 10:44:36 : BIOLAB: Installing 09/12/07 - 10:48:24 : Execution of :C:\TEMP\MASTERSETUP\sp_setup\..\"biolab_tools\Biolab\Install6100.exe" 09/12/07 - 10:48:24 : BIOLAB: Doing post-installation 09/12/07 - 10:48:24 09/12/07 - 10:48:24 : DRIVERS: Performing check. 09/12/07 - 10:48:24 : 09/12/07 - 10:48:24 : DRIVERS: Installing 09/12/07 - 10:48:39 : Execution of :C:\TEMP\MASTERSETUP\sp_setup\..\\Service\RAINBOWSentinel_Protection_Installer_7.1.1 /S /v/qn 09/12/07 - 10:48:39 : DRIVERS: Doing post-installation 09/12/07 - 10:48:39 : 09/12/07 - 10:48:39 : USDATA: Performing check. 09/12/07 - 10:48:39 : 09/12/07 - 10:48:39 : USDATA: Installing 09/12/07 - 11:04:27 : Execution of :xcopy /E /Y /K "C:\TEMP\MASTERSETUP\sp_setup\...\USDATA" C:\USDATA\ 09/12/07 - 11:04:27 : USDATA: Doing post-installation 09/12/07 - 11:04:27 : Execution of :rd /S /Q C:\USDATALAB Current process failed:rd /S /Q C:\USDATALAB Current process could continue anyway:rd /S /Q C:\USDATALAB 09/12/07 - 11:04:27 : SVG: Performing check. 09/12/07 - 11:04:27 09/12/07 - 11:04:27 : SVG: Installing 09/12/07 - 11:04:39 : Execution of :C:\TEMP\MASTERSETUP\sp_setup\..\biolab_tools\SVG\SVGViewLast6.0.exe /quiet /passive 09/12/07 - 11:04:39 : SVG: Doing post-installation 09/12/07 - 11:05:37 : Execution of :start /wait iexplore C:\TEMP\MASTERSETUP\sp_setup\..\sp_setup\accept.svg 09/12/07 - 11:05:37 : ECHOS: Performing check. 09/12/07 - 11:05:37 : Warning: this package could order a reboot. 09/12/07 - 11:05:37 : 09/12/07 - 11:05:37 : ECHOS: Installing 09/12/07 - 11:07:19 : Execution of :C:\TEMP\MASTERSETUP\sp_setup\..\Echosbin\SetupEchoS.msi /quiet 09/12/07 - 11:07:19 : ECHOS: Doing post-installation 09/12/07 - 11:09:59 : -----09/12/07 - 11:09:59 : ------ Started:C:\TEMP\MASTERSETUP\sp_setup\must 09/12/07 - 11:09:59 : -09/12/07 - 11:09:59 : Defaulting to local 09/12/07 - 11:09:59 : Updating security: OK 09/12/07 - 11:09:59 : Updating security: OK 09/12/07 - 11:09:59 : Master Šetup v.2.7.3 09/12/07 - 11:09:59 : Equipment: MyLab60/70 Version:V 3.01 09/12/07 - 11:09:59 : automatic installation 09/12/07 - 11:10:00 : CODEC: Performing check. 09/12/07 - 11:10:00 : 09/12/07 - 11:10:00 : CODEC: Installing 09/12/07 - 11:10:09 : Execution of :C:\TEMP\MASTERSETUP\sp_setup\..\biolab_tools\Codec\wmpcdcs8.exe /Q 09/12/07 - 11:10:09 : CODEC: Doing post-installation 09/12/07 - 11:10:09 : 09/12/07 - 11:10:09 : SECURITYUPDATE: Performing check. 09/12/07 - 11:10:09 : 09/12/07 - 11:10:09 : SECURITYUPDATE: Installing 09/12/07 - 11:21:30 : Execution of :C:\TEMP\MASTERSETUP\sp_setup\..\msupdate\runpatch.bat "C:\TEMP\MASTERSETUP\sp_setup\..\msupdate" 09/12/07 - 11:21:30 : SECURITYUPDATE: Doing post-installation 09/12/07 - 11:21:30 : 09/12/07 - 11:21:30 : CHECKME: Performing check. 09/12/07 - 11:21:30 : Warning: this package could order a reboot. 09/12/07 - 11:21:39 : Execution of :xcopy /R /E /Y /K "C:\TEMP\MASTERSETUP\sp_setup\..\SP_SETUP" C:\SP_SETUP\ 09/12/07 - 11:21:39 : CHECKME: Installing 09/12/07 - 11:21:39 : Operating on key:SOFTWARE\ESAOTE\MUST Operating on key:C:\sp_setup\must -9 Execution of :xcopy /R /Y "C:\TEMP\MASTERSETUP\sp_setup\..\swpack.xml" C:\SP_SETUP\ 09/12/07 - 11:21:39 : CHECKME: Doing post-installation 09/12/07 - 11:25:43 : Operating on key:SOFTWARE\ESAOTE\MUST Operating on key:C:\SP_SETUP\ Execution of :c:\sp_setup\check_usdata_md5.bat 09/12/07 - 11:25:43 : ENDINSTALL: Performing check. 09/12/07 - 11:25:43 : Warning: this package could order a reboot. 09/12/07 - 11:25:43 : 09/12/07 - 11:25:43 : ENDINSTALL: Installing

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09/12/07 - 11:30:42 :	
09/12/07 - 11:30:42 : Started:C:\TEMP\MASTERSETUP\sp setup\must	
09/12/07 - 11:30:42 :	
09/12/07 - 11:30:42 : Defaulting to local	
09/12/07 - 11:30:42 : Updating security: OK	
09/12/07 - 11:30:42 : Updating security: OK	
09/12/07 - 11:30:42 : Master Setup v.2.7.3	
09/12/07 - 11:30:42 : Equipment:MyLab60/70	
Version:V 3.01	
09/12/07 - 11:30:42 : Launch me last time to remove temp dirs.	
09/12/07 - 11:30:48 :	
09/12/07 - 11:30:48 : Started:C:\sp_setup\must	
09/12/07 - 11:30:48 :	
09/12/07 - 11:30:48 : Updating security: OK	
09/12/07 - 11:30:48 : Updating security: OK	
09/12/07 - 11:30:48 :	
09/12/07 - 11:30:48 : NEW INSTALLATION	
09/12/07 - 11:30:48 :	
09/12/07 - 11:30:49 : Master Setup v.2.7.3	
09/12/07 - 11:30:49 : Equipment:MyLab60/70	
Vorsion:V 2.01	
00/12/07 - 11:31:00 · Correct End of WHOLE	End of the installation process
US/12/07 - 11.51.00 . COnect End of WhOLE	

Hardware configuration error code description

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Firmware equipment error detected

Some kind of errors, that appears after the first step of the "Hardware configuration" check, are listed in a dedicated part of the error file Echos_Log. This is the "FIRMWARE EQUIPMENT ERROR DETECTED" and of course is not always present.

In case the unit is running well this part is not present and also in case of error at the beginning this won't be present.

Here below there is an example of one type of error.

FIRMWARE EQUIPMENT ERROR DETECTED. I 15:46:00.796 Number Dump = 6 15:46:00.796 Mask RTB Error = 0x0008 [BSC] 15:46:00.796 Mask RTB Present = 0x01eb [PC]BLC|BSC|DEP|DCP|DIP|IMC] 15:46:00.796 Device = BLC 15:46:00.796 Device = BSC 15:46:00.796 BLC Status = 0x0 15:46:00.796 Dump: 0x5 0x8 0x9 0x0 0x7 0x1 0x1c 0x0 0x0 0x0 0x0 0x2 0x2d2d 0x2d2d 0x2d2c 15:46:00.796 Device = DEP 15:46:00.796 BLC Status = 0x0 15:46:00.796 Device = DCP 15:46:00.796 BLC Status = 0x0 15:46:00.796 Device = DIP 15:46:00.796 BLC Status = 0x0 15:46:00.812 Device = IMC 15:46:00.812 BLC Status = 0x0 15:46:00.812 Equipment Error received 15:46:09.171

In this case the error is detected from the BSC board.

The field "Mask RTB Error" indicates the board which reported the error (in this case BSC).

The error code is in the line of "DUMP" of the board.

If all the data there a re 0x0 it means that the board didn't find any error, otherwise it's necessary to check the error code and see the reason of the trouble.

Usually to identify the problem is sufficient have a look at the first 3 words (in this case 0x5 0x8 0x9)

Of course not always the board which shows the error is the defective one. The boards have several communication processes and it's possible that the data which created the problem arrived from outside, even if it's reported form a determinate board.

How to read the DUMP

Every single position has its own meaning In the detail for the example:

```
15:46:00.796 Device = BSC
15:46:00.796 BLC Status = 0x0
15:46:00.796 Dump: 0x5 \ 0x8 \ 0x9 (the rest of the code is almost
always not necessary)
```



FIRST WORD (Common for all the boards):

It has six possible values (from 0 to 5):

VALUE	DESCRIPTION
0	No problem
1	Autotest error: internal to the board who shows the error, not
	necessary to read the other information of the DUMP message
2	Unknown message received: possible internal error (message not
	recognized due to some internal problem) or external (SW
	corrupted, BLC broken, BUS defective, board not well inserted)
3	Not Valid message: possible internal error (message not
	recognized due to some internal problem) or external (SW
	corrupted, BLC broken, BUS defective, board not well inserted)
4	Wrong Format of the message: mainly internal error
5	Runtime error: error in live condition.
	It's necessary to check the other information written in the
	DUMP, They have different meaning according the board who
	has the error

RUNTIME ERROR

This error code is different for every board. The tables below will indicate the different meanings according the board.

BLC

For this board the second word is the only to check:

ERROR	POSSIBLE REASONS
CODE	
0x0028	Message out of range (SW problem, bus problem, internal
	problem)
0x002A	Internal timeout expired (possible board broken or
	communication problem)
0x002D	Wrong message received (SW problem, bus problem, internal
	problem)
From 0x002E	Wrong message received (SW problem, bus problem, internal
to 0x0031	problem)
From 0x0043	Wrong message received (SW problem, bus problem, internal
to 0x0045	problem)
0x0046	Wrong power supply voltage sent (BLC or SPR)
0x0053	Wrong message received (SW problem, bus problem, internal
	problem)
0x0054	Message not compatible, wrong SW

BSC

For this board it's necessary to check the second and, in some cases, also the third word:

ERROR	POSSIBLE REASONS
CODE	
From 0x1 to	Generic error (mainly internal)
0x4	
0x5	Internal DSP memory error (board broken)
0x6	NOT USED at the moment
0x7*	DSP communication problems (it's necessary to see the third
	word)
0x8*	CINE memory error (it's necessary to see the third word)
0x9	Error download frame data (mainly internal error)

NOTE *: it's necessary to check the third word

ERROR CODE 0x7, meaning of the third word

ERROR	POSSIBLE REASONS
CODE	
0x0	DIP channel
0x1	DCP CFM channel
0x2	DEP channel
0x3	NOT USED
0x4	DCP Doppler channel
0x5	NOT USED
0x6	NOT USED
0x7	Internal channel DSP BSC

ERROR CODE 0x8, meaning of the third word

ERROR	POSSIBLE REASONS
CODE	
From 0x1 to	Internal error BSC
0x8	
0x9	Error receiving data (possible DEP, DCP. DIP or BSC)
0xA	No frames produced (DEP, DCP or may be one of the ITRs)
0xB	Wrong command (internal error BSC)

DIP

ERROR CODE	POSSIBLE REASONS
From 0x2 to	Internal problem loading SW (possible board broken, SW
0x3	corrupted, bus broken)
0x4	Communication error between IMC and DIP (IMC or DIP
	broken)
0x5	Transmission error (DIP, DCP, DEP, BSC)

DEP

ERROR	POSSIBLE REASONS
CODE	
From 0x1 to	Internal problem loading SW (possible board broken, SW
0x7	corrupted, bus broken)
0x8	Timeout expired (DEP broken, external process stopped)
0x9	Transmission error (usually internal problem)
From 0xA to	Internal SW problem (DEP broken, SW corrupted)
0xD	

DCP

ERROR	POSSIBLE REASONS
CODE	
0x1	Internal error
From 0x2 to	Not used
0x3	
From 0x4 to	Internal error
0x5	
0x6	Sync error (DIP, DCP)
0x7	Doppler error (DCP, DIP if PW, ICC if CW)
0x8	Communication error (DIP, DCP)
From 0x9 to	Internal process error
0xB	
0xC	Buffer problem (DCP)

IMC

ERROR	POSSIBLE REASONS
CODE	
0x1	Internal error
From 0x2 to	Communication error IMC or BLC
0x3	
From 0x10	Internal error
From 0x20 to	Communication errors between IMC and ICS
0x23	
0x40	Internal error
0x50	Internal error
From 0x60 to	Internal process error or communication error (BLC, IMC)
0x62	

Examples of firmware error

-EXAMPLE 1

After a system error in the part

| FIRMWARE EQUIPMENT ERROR DETECTED. |

of the Echos_log file you can find:

14:31:55.234 Number Dump = 6 14:31:55.343 Mask RTB Error = 0x0008 [BSC] 14:31:55.343 Mask RTB Present = 0x01eb [PC|BLC|BSC|DEP|DCP|DIP|IMC].....

 14:31:55.343
 Device = BSC

 14:31:55.343
 BLC Status = 0x0

 14:31:55.343
 Dump: 0x5 0x8 0xa 0x0 0x0 0x0 0x0 0x0.....

This is a runtime error (0x5) of the Cine memory (0x8) to produce frames to display on the screen (0xA).

This is due to the BSC, DEP, DIP or to the SW in case the release is before the 3.12

-EXAMPLE 2

After a system error in the part

FIRMWARE EQUIPMENT ERROR DETECTED.

of the Echos_log file you can find:

 15:39:58.208
 Number Dump
 = 3

 15:39:58.311
 Mask RTB Error
 = 0x0008 [DIP]

 15:39:58.311
 Mask RTB Present
 = 0x01eb

 [PC]
 BLC
 BSC
 DEP
 DCP
 DIP
 IMC]

 15:39:58.311
 Device
 = DIP

 15:39:58.311
 BLC Status
 = 0x0

 15:39:58.311
 Dump: 0x5 0x4 0x0 0x0 0x0 0x0 0x0 0x0.....

This is a runtime error (0x5) due to a communication problem between the DIP and the IMC (0x4).

This is due to the DIP or IMC.

It's possible to solve with the modifications of the DIP board described in the TN 109

Different error messages

There are conditions of error which are not listed among the error described before.

Here there is a list of the most common problems found:

-PROBLEM 1

system error message, reading the Echos_log file there is this message

Executor .cpp 902 ERROR Executor: Ricevuto Evento **PCI ERROR**

The PCI error is usually due to the PLC (inside the PC group) which is in error.

In this case it's necessary to check the PLC, the flat cable connected on it or the BLC

-PROBLEM 2

system error message, reading the Echos_log file there is this message

12:48:51.484 Executor: I2c: Send address error I2cCode=(3), I2cAttempt=(0) 12:48:51.484

Executor.cpp 1582 ERROR:.... Executor: SendI2CCMD(...) Failed BusI2C=BusVideoEncoderPVA bDeviceAddr=136 nErr=3

12:48:51.484

Main.cpp 94 ERROR:.... Executor: dwMessageParseSchedule(...) ErrorCode = 1359

12:48:51.484 Executor: Max I2c Time:1.0 [ms] 12:48:51.593

StartThr.cpp 860 ERROR:..... The Process Executor.exe has died

In this case this error is due to the PVA defective Usually it's solved if applied the modifications described in the TN 109 and 111 (for boards IC 2 or 3). If the problem remains try to replace the board.

At the startup the system starts but remains blocked at the US windows with the message "please wait" and sometimes appears the message system error message. Reading the Echos_log file there is this message

KBD.cpp384ERROR:....**KBD Error : Ack time Out**

16:05:00.343

StartThr.cpp 860 ERROR:..... The Process Kbd.exe has died

In this case the keyboad doesn't answer to the system.

Try to check if the USB cable connected in the plug nr. 3 is well positioned (check both sides: PC side and Display group side), check if the cable which supply the voltages is connect (both sides as the USB) check the flat cables between the keyboard and the display group. Replace the USB cable

Replace the keyboard group or the display group or the PC.

-PROBLEM 4

The image is ok but reading the Echos_log file there is this message:

12:03:28.312 Ecom : Start new exam
12:03:28.328 Ecom : Select probe (EQD become valid)
12:03:28.890 Ecom : BioLab background
12:03:28.890 Ecom : Connector A; Ceramic CA431 ; Application
ABDOMEN; Factory Default GENERIC; User preset
12:03:32.203

BlcSetSPRAdv.cpp	311	ERROR:
Executor: Error rece	ived in	[SetSPRAdvAnsw] - details:
BLC status	=	0
Valim H [mV]	=	80396
Valim L [mV]	=	0
Setting Time [ms]	=	60
IMC status	=	3
IqVal	=	327
IqLimInf	=	351
IqLimSup	=	789

This indicates that the current that the ITRs request to the PS is not in the range but a little bit lower. In this case the range must be between 351 and 789 but instead is 327. This does not stop the machine due to the fact there is a small difference from the range. In case of condition dangerous (usually current higher than normal) the BLC status will be different from 0 (zero) and the system will show a system error message.

System error message. Reading reading the Echos_log file there is this message:

15:01:35.171 Start: Quitting on command ShutDown
15:01:35.171 Start: in shutdown Quit received from Start. Send Quit: 0xC453
15:01:36.171 Gws: Quit message received
15:01:36.171 Executor: Quit Message Received.
15:01:36.171 BioCom : exit
15:01:36.171 Ecom : Exit phase (HCD become invalid)
15:01:36.171 Gws: DisconnectToIpc Exit
15:01:36.187

Hardware configuration NOT AVAILABLE

Here the system doesn't recognize the HW installed in the unit and for this reason doesn't start.

Check the PC group (PLC board in particular), BLC. ICC and SPR. Check the flat cable between the PLC and the bus of the unit.

-PROBLEM 6

Windows error starting the unit with USB pendrive connected to the frontal plug

Do not start the unit with USB pendrive inserted. It's possible that the unit doesn't start correctly and doesn't find the HDD. To solve it's sufficient to turn off, remove the USB and restart

There is a similar problem in case of installation of SW with a WIFI USB connected.

The system may hang and the SW not installed correctly

-PROBLEM 7

Accessing as administrator the "start" icon to run the US program on the desktop is not present.

You can add it again in the following way:

Go in c:\EchosBin\Bin\release and select the "start.exe" Create a shortcut on the desktop with the start and then select it and open the properties. There will be the path. In the path do not delete anything but simply add after "...start.exe" a space and the write -ogwl With this the icon will work again.

Starting the unit there is a "System error message". Looking at the error file there is the following message:

Log File Name	: Echos_log005.log
Max File Dimension[c	lefault value]: 1024KB
Log Files Number	: 100
Enable Level Mask	: 0x0000001

12:09:02.015	Start: TOTAL STARTS 6 BAD SHUTDOWNS 0
12:09:02.250	Start: SW Version = 6P0009.SR.000
12:09:02.250	Start: Hw key = Service
12:09:02.265	Start: System Start Up
12:09:02.265	Start: Arguments: -ogwl
12:09:03.156	Start: End StartUp from Kbd.exe
12:09:03.156	Start: End StartUp from Nti.exe
12:09:03.500	Start: End StartUp from Vtr.exe
12:09:03.578	Start: End StartUp from Ecom.exe
12:09:04.921	Start: End StartUp from BioCom.exe
12:09:06.671	Start: End StartUp from Gwl.exe
12:09:06.703	

HSCLDriver.cpp 160 ERROR:.... Executor: CreateFile(...) Failed

12:09:06.703

Executor.cpp 770 ERROR:.... Executor: dwOpenDriver(...) ErrorCode = 6

12:09:06.718

Executor.cpp 205 ERROR:.... Executor: dwHSCLDDInit(...) ErrorCode = 6

12:09:06.718

Main.cpp 71 ERROR:.... Executor: dwInitApplication(...) ErrorCode = 6

12:09:06.953 Error detection in progress ...12:09:07.390 Gws: IPC message size: 375212:09:07.968 Start: Send Quit to Ecom.exe.

This is a problem that could depend about the PLC board. Try to replace this board (inside the PC group) or all the PC group.

Starting the unit there is a "System error message". Looking at the error file there is the following message:

Log File Name	: Echos_log395.log
Max File Dimension[d	lefault value]: 1024KB
Log Files Number	: 100
Enable Level Mask	: 0x00000001

07:39:11.812	Start: TOTAL STARTS 36 BAD SHUTDOWNS 5
07:39:11.968	Start: SW Version = IA0000.O.030
07:39:11.968	Start: Hw key = None (user)
07:39:11.968	Start: System Start Up
07:39:12.000	Start: Arguments:
07:39:12.250	Start(and so on)

- 07:39:17.984 Executor: Verifty Pld [BLC] Executor: Presence = 0x1 Executor: HardwareCode = 0x10 Executor: Error Code = 0x0 Executor: N Jtag = 2 Executor: Type = 0x4 UsCode = 0x1000013 Executor: Type = 0x0 UsCode = 0x3 Executor: -----
- 07:39:18.015 Executor: Verifty Pld [PLC] Executor: Presence = 0x1 Executor: HardwareCode = 0x0 Executor: Error Code = 0x0 Executor: N Jtag = 1 Executor: Type = 0x4 UsCode = 0x3 Executor: -----
- 07:39:18.031 Executor: Verifty Pld [PVA] Executor: Presence = 0x1 Executor: HardwareCode = 0x0 Executor: Error Code = 0x0 Executor: N Jtag = 1 Executor: Type = 0x4 UsCode = 0x100002c Executor: -----

07:39:18.031

Executor .cpp1982error:....Executor : card not present !!!Slot=0x19

And after some messages there is the error

Hardware configuration

NOT AVAILABLE

This error means that one board is not recognized from the unit. So or the board is defective or not well inserted in the slot.

The information Slot indicates the board. Here below there is a table who indicates about the code associated to the board:

BOARD	NUMER OF THE	NUMBER
	SLOT	(HEXADECIMAL)
BLC	0	0x0
BSC	2	0x2
DEP	4	0x4
DCP	5	0x5
DIP	6	0x6
IMC	7	0x7
ICC	8	0x8
ITR 1	9	0x9
ITR 2	10	0xA
ITR 3	11	0xB
ITR 4	12	0xC
ITR 5	13	0xD
ITR 6	14	0xE
ITR 7	15	0xF
ITR 8	16	0x10
ITR 9	17	0x11
ITR 19	18	0x12
ITR 11	19	0x13
ITR 12	20	0x14
ICS	21	0x15
SPR	22	0x16
SPS	23	0x17
BMB	24	0x18
PVA	25	0x19
PLC	26	0x1A

So in this case with the message 0x19 is a problem of PVA. So check the insertion of the board or replace it.

Starting the unit there is a "System error message". Looking at the error file there is the following message:

Log File Name.....: Echos_log185.log Max File Dimension...[default value]: 1024KB Log Files Number.....: 100 Enable Level Mask...... 0x00000001

10:35:17.968 Start: TOTAL STARTS 185 BAD SHUTDOWNS 2 10:35:18.062

Check_Iq0_Off	=	0	Iq0_Off	=	-101
Check_Iq0_Low	=	0	Iq0_Low	=	-100
Check_Iq0_High	=	0	Iq0_High	=	-128
Check_ITR12	=	0	DIq_ITR12	=	91
Check_ITR11	=	0	DIq_ITR11	=	97
Check_ITR10	=	0	DIq_ITR10	=	91
Check_ITR9	=	0	DIq_ITR9	=	81
Check_ITR8	=	0	DIq_ITR8	=	97
			*		
Check_ITR7	=	1	DIq_ITR7	=	255
Check_ITR7 Check_ITR6	=	1 0	DIq_ITR7 DIq_ITR6	= =	255 94
Check_ITR7 Check_ITR6 Check_ITR5	= = =	1 0 0	DIq_ITR7 DIq_ITR6 DIq_ITR5	= =	255 94 94
Check_ITR7 Check_ITR6 Check_ITR5 Check_ITR4	= = =	1 0 0 0	DIq_ITR7 DIq_ITR6 DIq_ITR5 DIq_ITR4	= = =	255 94 94 100
Check_ITR7 Check_ITR6 Check_ITR5 Check_ITR4 Check_ITR3	= = = =	1 0 0 0 0	DIq_ITR7 DIq_ITR6 DIq_ITR5 DIq_ITR4 DIq_ITR3	= = = =	255 94 94 100 88
Check_ITR7 Check_ITR6 Check_ITR5 Check_ITR4 Check_ITR3 Check_ITR2	= = = = =	1 0 0 0 0 0	DIq_ITR7 DIq_ITR6 DIq_ITR5 DIq_ITR4 DIq_ITR3 DIq_ITR2	= = = =	255 94 94 100 88 85
Check_ITR7 Check_ITR6 Check_ITR5 Check_ITR4 Check_ITR3 Check_ITR2 Check_ITR1	= = = = =	1 0 0 0 0 0 0	DIq_ITR7 DIq_ITR6 DIq_ITR5 DIq_ITR4 DIq_ITR3 DIq_ITR2 DIq_ITR1		255 94 94 100 88 85 81

Executor: Received InitTestIATChainANS - details:

In the field "Check ITR" is tested the max current requested from every single ITR board. A correct value is in a range between 85 to 115 (approx.).

When the current is in the range the value after the "Check_ITR" is 0 (zero), if the value is out of the correct range (too low or to high) the value is different from 0 (zero).

In the example the ITR nr. 7 requests an high current and the value of the data is 1. Replacing the ITR the system will work again.

This check is available for the 70 XVG system only.

Starting from the SW release 5.02 has been enabled an automatic control who is able to disable automatically the ITR who is requesting an higher current. In this case the unit will be able to work with 11 ITRs enabled and one disabled.

In the monitor you'll find the message: "CALIBRATING" on the ultrasound image and the message "Warning: reduced ultrasound power! Please contact the Service department" in the tip area. The first message will remain only for the time the check is performed, the second will remain till the ultrasound scanner is switched off.

NEW SOFTWARE TOOLS FOR ITR BOARDS

Starting from the release 5.02 new software tools are available for ITR boards:

- Algorithm for the management of "Power Alarm" events.
- New software tool to selective exclusion of the ITR in transmission (for service only)

It's important to underline that the tools are available only for MyLab70XVG

Algorithm for the management of "Power Alarm" events.

The algorithm is introduced to avoid system error messages when the system detects a power absorption too high. Till now the system was stopped with a system error message in this case. The algorithm will try to solve the problem disconnecting the ITR responsible for this extra-absorption. In this way the unit will work with 11 ITRs. One ITR disabled doesn't affect the quality of ultrasound image. In case of more ITRs with overload problem or problem created by the SPR board the system will stop with system error message. The algorithm is working automatically only in user mode (it is not possible to disable it); it is not activated accessing as administrator with the service key inserted in order to allow the trouble shooting.

In case of over-load the algorithm starts working and will appear the message "CALIBRATING" on the ultrasound image and the message "Warning: reduced ultrasound power! Please contact the Service department" in the tip area. The first message will remain only for the time the check is performed, the second will remain till the ultrasound scanner is switched off. If the overloading problem is occasional it is possible that the message won't appear again; if the overloading problem is regular the message will appear every time the system will be turned on until the problem will be solved. All the algorithm activities are recoded in the log file.

Note

In case of spikes in the image the algorithm may identify them as an overload and so show the message described before and create a report as for the overload. Will be necessary to perform all the checks described in the next paragraph 5.2, condition where the algorithm is disabled.

AtEC.cpp COnAlarmPov AlarmCounter Power Lim Sup Power Lim Inf Power ID Vat	330 ERROR: verMP(): power alarm! = 1 = 12170 vr = 24000 = -4000 = 1707 = 71300))))))))))		Power Alarm Registration
11:24:33.828	ITR Mask Status	Vwr[V] Vrd[V] Ts[ms] Iq[mA] Iqmin Iqmax IqPreAl IqLimSup	Re-starting attempt
11:24:33.828	11111111111 2	81 7	305 2274 351 789 466 559	
11:24:33.906	ITR Mask Status	Vwr[V] Vrd[V] Ts[ms] Iq[mA] Iqmin Iqmax IqPreAl IqLimSup	
11:24:33.906	00000000000 0	81 80	30 34 0 0 466 0	Whole Front-end
11:24:34.265	ITR Mask Status	Vwr[V] Vrd[V] Ts[ms] Iq[mA] Iqmin Iqmax IqPreAl IqLimSup	disconnection
11:24:34.265	01111111111 2	81 7	305 2192 322 723 466 512	
11:24:34.625	ITR Mask Status	Vwr[V] Vrd[V] Ts[ms] Iq[mA] Iqmin Iqmax IqPreAl IqLimSup	
11:24:34.625	101111111111 2	81 7	305 2164 322 723 466 512	
11:24:34.968	ITR Mask Status	Vwr[V] Vrd[V] Ts[ms] Iq[mA] Iqmin Iqmax IqPreAl IqLimSup	
11:24:34.968	110111111111 2	81 7	305 2195 322 723 466 512	
11:24:35.328	ITR Mask Status	Vwr[V] Vrd[V] Ts[ms] Iq[mA] Iqmin Iqmax IqPreAl IqLimSup	Not correctly working
11:24:35.328	111011111111 2	81 7	305 2142 322 723 466 512	board searching.
11:24:35.687	ITR Mask Status	Vwr[V] Vrd[V] Ts[ms] Iq[mA] Iqmin Iqmax IqPreAl IqLimSup	12 rows maximum
11:24:35.687	111101111111 2	81 7	305 2170 322 723 466 512	
11:24:36.031	ITR Mask Status	Vwr[V] Vrd[V] Ts[ms] Iq[mA] Iqmin Iqmax IqPreAl IqLimSup	
11:24:36.046	111110111111 2	81 7	305 2179 322 723 466 512	
11:24:36.125	ITR Mask Status	Vwr[V] Vrd[V] Ts[ms] Iq[mA] Iqmin Iqmax IqPreAl IqLimSup	」 丿
11:24:36.125	111111011111 0	81 80	35 450 322 723 466 512	

Where:

ITR Mask represents the twelve ITR boards, from left to right is from ITR1 to ITR12. "1" means ITR enabled, "0" means ITR not enabled Status shows the operating conditions of the power supply. "0" means current requested from the boards between the correct limits. "2" means overload. Vwr and Vrd represent the set voltage and the read voltage (the one measured) respectively.

Ts means the time necessary to set the correct values of voltage and current. If it is too high (more than 300ms) means there is a problem.

Iq means current measured during the various checks.

Iqmin and Iqmax correct range of current values (minimum and maximum values).

The example before shows one case where the algorithm started:

- The first step is to detect the power consumption problem (power alarm registration)
- The system will check again the current and the voltage requested with all the ITRs enabled (re-starting attempt)
- In case of overload the system will try to check the output voltage without ITRs enabled (whole front end disconnection). In case the voltage is now correct means ITR problem and the system will start to check the unit measuring the requested current and voltage disabling all the ITR one by one. If also in this case the voltage is not correct the system error will appear and probably the SPR has some problem.

• Phase of check of the ITRs (not correctly working board searching). The field below the voice ITR mask indicates which is the ITR disabled. For example if you find 011111111111 means that the ITR number one is disabled and all the other are enabled. In the example proposed it is possible to see that all the checked values returns in the range (status value 0) when the ITR number 7 is disabled (ITR mask 11111011111). In this case will be necessary to replace the ITR number 7. In case of more than one defective ITR for all the checks the values will be out of range and the status will remain always 2 (so hanging with system error message).

New software tool to selective exclusion of the ITR in transmission

In the Laboratory menu (accessible only in administrator way with the service USB key inserted) is now available the "Enable Itr" option. Once selected the following window appears:

Itr Enable								×
		Rx ch	ain					
1	4		8				12	
	V			$\overline{\mathbf{v}}$	$\overline{\mathbf{V}}$	$\overline{\mathbf{v}}$	$\overline{\mathbf{v}}$	
		Tx ena	able					٦
1	4		8				12	
	$\overline{\vee}$		$[\overline{\vee}] = [\overline{\vee}]$	$[\underline{\nabla}$	$[\underline{\nabla}]$	$\overline{ \nabla }$	$[\underline{\vee}]$	
	C	Select	🖲 Activ	/ate				

This feature allows to disable in reception (Rx chain) and/or transmission (Tx enable) the selected ITR boards.

Rx chain is available in MyLab60, MyLab70, MyLab70 XVision and MyLab70 XVG; it disable the reception of the selected board. Note. If you select one board all the ITRs board till the one selected will be

disabled in reception. For example if you select the ITR number 4, then the ITRs 1, 2, 3, 4 will be disabled. That means that these boards do not contribute to reconstruct the image but they are still used to transmit. To disable an ITR just click on the related checkbox.

Rx chain is useful to investigate problems on the image (lines, channels missing).



Tx enable is available only in MyLab70 XVG; it disables the transmission of the selected board disconnecting from the high voltage line the board selected. This feature is useful to check for overload (hanging with system error message) and image problems (white spikes).

How to proceed

The "Tx enable" option allows to disable/enable the transmission of one or more ITRs.

To disable the ITRs choose Select, then click on the checkbox to disable the related ITR. The software allows to disable one or more ITRs also not in sequence (for example you can disable the 1, 5 and 10).

Note that once Select is pressed the image become black waiting for the command from the user.

Selecting Activate you will see again the ultrasound image without the contribute in transmission of the boards disabled.

The following picture shows the effect on the image when the central 8 ITRs are disabled in Tx.



The following picture shows the effect on the image when the first six ITRs are disabled in Rx.



The following picture shows the effect on the image when the first six ITRs are disabled in Rx and the central 8 ITRs are disabled in Tx..



In MyLab70 XVG it is possible to use at the same time both the features (Rx chain allows to disable consecutive boards).

Minimum Hardware configuration

It's possible (only for service purposes) start the unit without inserting some of the boards.

Of course in this condition won't be possible to get any image. This configuration is useful only if you have a system error message at the startup which involves several boards.

This is not useful in case of error messages during the real time.

BOARDS	NOTE
SPR, SPS, BLC, ICC,	It's possible to arrive till the probe selection.
ICS, IMC PC Group,	It's possible to select the probe and see the overlays.
complete keyboard	No image (all black), it's not possible to select the
	CFM and doppler functions
Add ITR nr. 12 (the one	It's possible to arrive till the probe selection.
close to the IMC)	It's possible to select the probe and see the overlays.
	No image (all black), it's not possible to select the
	CFM and doppler functions
Add all the ITRs	It's possible to arrive till the probe selection.
	It's possible to select the probe and see the overlays.
	No image (all black), it's not possible to select the
	CFM and doppler functions
Add the DIP	It's possible to start he unit, it's possible to select the
	CFM box and doppler. All the images will be black
Add the DCP	It's possible to start he unit, it's possible to select the
	CFM box and doppler. All the images will be black
Add the BSC	It's possible to have an image, without X-View
	function
Add the DEP	Full configuration

Here you have the possible configurations:

NOTE:

Without BSC and DCP but with DEP onboard the unit hangs Without BSC, DCP, DEP and leaving in some ITRS (12 always present and then 11, 10, 9...till the hole) the machine starts but no image With BSC onboard is not possible to remove the other boards (excepted DEP). The system hangs with system error.

REMIND: with minimum hardware configuration not all the functionalities has been tested and enabled.

Fault Description

The description of the fault has to be the more detailed as possible, since this simplifies the problem identification and solution The following information should always be reported:

- When applicable, the active probe.
- If the problem affects the real-time functioning, the active application and modality (for instance, in cardiac application with Doppler PW).
- If the problem affects the not-scanning operations, the involved function (such as measurements, annotations, report..).
- If the problems is related to data archiving, the used support (internal Data Base, Dicom server..) and the kind of failure (data not transferred, missing data..).
- If any background operation was running when the problem occurred.
- If the problem is related to the peripherals, the kind of peripheral and its failure.
- If the problem is during the upgrading procedure, the used procedure and the step.
- If the problem is intermittent and reproducible: whenever it is possible, it is extremely useful for the fault identification to have a kwon operations sequence that always reproduces the problem.

Together with this information, the description should state all the steps that cause the problem (for instance during 2D-CFM scanning with PA230 probe in Cardiac, the 2D sector was reduced to 45°, the CFM sector was set to concurrent. After having saved a clip the scanning sector doesn't follow the movements of the trackball). Images and/or Clips showing the problems are of course another useful item.
Chapter

2 - Error messages

Besides the error files regarding hardware problems the MyLab can display different error messages generated by the Operating System or by the software.

Messages from the Operating System

When the system displays a Windows error message, it means that some file is corrupted or some error is occurred.

Suggestions

First of all check the PC boards' and peripherals' drivers are correctly installed.

If the problem persists, install again the Operating System (using recovery disk) and the Software release.

If the problem persists, write down the error message (or save an image), collect the System Info and the Error files and get in touch with the central Service.

Messages from the MyLab software

When the system displays a "System error" message, write down the error message (or save an image), collect the System Info and the Error files and get in touch with the central Service. The image shows a generic error. When the unit hangs the "System error" message shows the possible options "reboot" who restarts the unit and "export" that saves the error logs automatically in one USB memory. The system will generate on esatmp.cab file. The "cab" is a compression modality.

Diagnostic		
The Process From eye has died		
System Error		
,		
Exit		

Messages after wrong shut down



This message informs that the system was not correctly shut down press OK to start MyLab.

Chapter 3

3 - Hardware errors

IMAGE PROBLEMS

Fixed CFM noise





If you move the box and the problem remains in the same point is one or more ITR broken or a Probe defective

Cone of noise



This is one (or more) channel(s)broken on the ITR Board.

Noise in the ultrasound image



Usually this kind of noise is due to the ITR board



Noise in the CFM Box and in the BW image (triangular noise)

This problem is due to one (or more) ITR

High level of offset noise



This problem is usually due to the DIP board



Triangular holes in the top of the BW image, noise and bad image

This is due to one (or more) ITR board(s) which is (are) not running



Still ITR board(s) defective

Wrong color palette with color missing



In case of wrong CFM palette and color missing the problem is due to the BLC or BSC

Black and white image not present, but overlay present:

DEP broken

ICC

ITR

Bad image reconstruction



As you can see the image is not correct in the middle (as there is a line who separate two different images). In this case this is a problem of BSC boar.

Try to replace it or to upgrade it to the latest IC in case is old.

Noise in the CW Doppler



In case of CW with fixed noise you can try to replace the ITRs or the ICC.

In case you won't solve try with DCP.

Summarizing

Item	Problem	Solution
Image	No image (all black)	ITR completely off, BSC or DIP broken
	Black vertical lines in the image	Probe defective, ITR defective, ICS defective
	High level of offset noise	DIP defective
	No image and no palette	Flat cable on PVA not well connected, PVA defective, BLC defective
	Image with little dots	BSC defective
	Image with horizontal line and divided in two parts	BSC defective
B mode	some channels are missing	ITR defective
	Image with cone of noise	One or more ITR broken
	Triangular holes in the top of the BW image, noise and bad image	One or more ITR broken
CFM	Moving the CFM box the system stops with system error message	BSC or DCP defective
	CFM with noise	DIP or DCP defective.
		If you move the box and the problem remains in the same point is one or more ITR broken or a probe defective.
	NO CFM at all	DIP, DCP or BSC defective
	CFM intermittent or with noise	DCP or DIP defective
	CFM with lines of noise	DCP or DIP defective, ITR defective (check also for BW problems)
	Noise in the BW image	ITR defective
	Noise in the CFM box	ITR defective

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CW	No CW at all	ICC or DCP defective
PW	PW with noise	DIP or DCP defective
	NO PW at all	DIP, DCP or BSC defective
	Selecting the PW the system stops with a system error message	DCP defective

Problems on the system

Keyboard	The keyboard doesn't start at all (not lighted, the keys doesn't respond, system error message on the screen, display not lighted)	Cable not connected in the connector C9 in the AKCP, display group defective
Audio	No audio to the speakers	PVA or display group defective (if it's only the audio doppler but the VTR is ok is the DCP)
System	The unit doesn't start at all	a) If the on/off key is not lighted try to replace the keyboard group, display group, PSE, SPS, SPRb) If the on/off key is lighted try to replace the BLC, PC group, keyboard group
	The system reboots automatically and unexpectedly	Check the correct insertion of the power cable. The power cable must be completely inserted in the main power plug.
	Colors missing or wrong in the monitor	PVA defective or monitor broken
	The CINE doesn't work correctly	BSC defective
	Wrong palette	BLC defective

Problems during the setup of SW release.

In the backside of the MyLab70 units there are four switches: 2 on the PVA board (S1) and 2 on the PLC board (S2).



Each switch is ON in the UPPER POSITION, off vice versa.

In normal conditions the switches of the PVA and PLC must always be placed on the ON position.

The switches of the PLC enable different releases of the internal firmware:

Switch position	Firmware
Both ON	Last update
Both OFF	Factory version
One ON and o	ne OFF Not allowed

So, if the switches are to ON the board load the last firmware version, otherwise to OFF position the board work with the factory firmware version (oldest release).

If during an upgrade, the software crash there is the risk that the firmware written in the PLC is not able to drive the board and the system is not able to complete correctly the upgrade.

Switching off the two switches the machine starts with the old firmware (factory default) and it is possible to repeat the setup from the beginning. In case the upgrade will finish correctly it is necessary to switch off the machine and place again the two switches of the PLC in the on position. If the problem was only due to one bad upgrade the system has to start correctly.

System Slow Down

The system is working slow both in real time and in accessing to the archive.

Suggestions

Check the HD free space by positioning the cursor on the HD icon.

Green Sector	Yellow Sector	Orange Sector

The coloured circle displayed in the HD icon can be used as an immediate feedback on the free space. The green sector indicates full space availability. When the sector is displayed in yellow, it is suggested to copy the archive on an external support to free space; when in orange the copy of the archive is mandatory. Once done, cancel the copied exams from the internal archive.

If the HD is not full, collect the log and System Configurations files and get in touch with the central Service.

How to simulate a probe

-Enter as Administrator (with full control by using USB service key) and wait till Win XP ends the boot steps.

-run MyLab program with a double click on the icon "Start" on the desktop

-when the probe selection mask appear, with "CTRL" and "ESC" enable the taskbar and select the SW icon



-will appear the following mask, select "Laboratory" and then "Probe simulation", click on it

🔏 EV1221.SV.000 🔳 🗖	
Quit	Laboratory
	Probe Simulation

-will appear the following mask, select the checkbox "Enable Simulation" and select a connector and a probe

Probe Simulation		
 A Connector 	CA123	Physical Probe
C B Connector	PA230 💌	PA230
C C Connector	CA621	NO PROBE
C D Connector	LA523	NO PROBE
C Pencil Connector	NO PROBE	NO PROBE
Enable Simulation	OK	

How to determine the ITR defective

-Simulate a probe selecting "LATEST" or "CATEST" from the list. Be sure to select a physical probe with the same geometry of the simulated probe (LATEST for Linear Array probes and CATEST for Convex Array probes).

-Start a new exam selecting the probe you have just simulated, any application and preset.

-When Real-time is active press LINE.

-Using the trackball position the line on the channel missing, on the left of the image the following information will be displayed:

Item	Description
СН	Number of the channel
Nr. ITR	Number of the ITR board
Nome ITR	Number of the channel on the ITR board

Chapter

4 - Archiving Supports Troubleshooting

This chapter gives some indications to locate the more common problems and failures occurred with archiving supports.

CD Burning Problems

The system can't burn CD.

Suggestions

The below flow chart indicates the possible solutions.



DVD Burning Problems

The system can't burn DVD.

Suggestions

The below flow chart indicates the possible solutions.



CD/DVD not readable

The system can't access to CD/DVD support.

Suggestions

- 1. Check if the same CD/DVD can be accesses from another system.
- 2. Check the burner connection and drivers.
- 3. Replace the burner.

Not Recognized External USB Hard Disk

The external USB HD is connected but it is not recognized by the system.

Suggestions

The below flow chart indicates the possible solutions.



Not Recognized USB Memory Drive

The USB memory drive is connected but it is not recognized by the system.

Suggestions

The below flow chart indicates the possible solutions.



Archive not found in the external supports

It is not possible to access to the archive located in external supports (external HD, USB memory drive..).

Suggestions

- 1. Check if the Archive folder is in the main support root. If not, move the Archive folder at the first root level.
- 2. Collect the system configuration and log files, and get in touch with the central service.

Chapter 6

5 - Peripherals and Network Troubleshooting

This chapter gives some indications to locate the more common problems and failures occurred with peripherals and network.

Windows Printer not Active

The windows printer has been installed but the system is not printing.

Suggestions

The printer could not print simply because it is still disabled. The below flow chart indicates the possible solutions.





No Printings

The printer is installed and set (its icon is displayed) but it is not printing.

Suggestions

The below flow chart indicates the possible solutions.



Not Recognized Printer

The printer is installed and set but it is not recognized by the system (the disabled peripheral icon is displayed).

Suggestions

- 1. If the printer is an USB printer, connect it to the other USB port available.
- 2. If the problem persists, write down the printer model, collect the log and System Configurations files and get in touch with the central Service.

Network Directory

It is not possible to access to the network directory.

Suggestions

The below flow chart indicates the possible solutions.



Chapter

1 - Check List

This chapter proposes two different check lists. The first one (Technical Check List) suggests a set of inspection steps to be performed each time service personnel modify the HW/SW composition (for example a board replacement or functional upgrade); the other one (Maintenance Check List) suggests a check list intended for a general equipment inspection like yearly maintenance.

Technical Check List

Once any HW/SW change, modification or upgrade is finished and the unit is ready to be closed, perform the following:

Step	Tool	Description
1	-	Make note of any new board which have been replaced (REF
		and C.I.).
2	Philips screwdriver	Close the unit.
	Straight Head	
	Screwdriver	
	Socket wrench	
	Box wrench	
3	Service key	Switch the unit on with the service key inserted.
4	-	If necessary set the boards C.I.
5	-	When applicable, verify that the upgrade is working.
6	Printer	Select the "Licenses" option (MENU key), print out all the
		screens and place them in the pocket placed in the rear cover.
7	-	Switch the unit off.
8	-	Re-install the unit.
9	-	Verify the unit functioning using the Maintenance Check List.



Maintenance Check List

Step	Tool	Description
1	-	Check the unit for any external damage.
2	-	Check the wheels and the brakes functioning.
3	-	Check that the unit labels (S/N, Reference and Certification)
		are present.
4	-	Check the power cable status (no cut, plug condition) and
		connection.
5	-	Check the connectors in the rear panel (no loosing connector).
6	-	If installed, check the ECG cable status.
7	Allen screwdriver	Clean the trackball.
	Philips screwdriver	
	Straight Head	
	Screwdriver	
8	-	Check that the keyboard orientation works properly: the
		keyboard must be both oriented and locked.
9	-	Check that the keyboard can be lift up and down.
10		Check that the monitor can be moved easily.
11	-	For all probes, check the external status (cable, housing,
		connector and labeling). Refer to "Transducers and
		Consumables" manual for further information.

Physical Check

General Check

Step	Tool	Description
1	-	Press the MENU key and select the "Licenses" option.
2	(Printer)	Compare the configuration prints located in the lower pocket
		with the configuration screens. If necessary replace the prints.
3	Operator Manuals	Check that the operator manuals are present and their revisions
		are relevant to the installed software release.
4	-	Check that the keyboards keys are lighted and functioning.
5	-	If necessary, adjust the Monitor/LCD brightness and contrast.
6	Unit probes	Verify that all transducers are correctly identified in each
		connector.

Functional Check

Step	Tool/Mode	Description		
1	B-Mode	Verify that the mode keys (Gain, TGC, POWER) and all the		
		Softkeys controls work properly.		
2	M-Mode	Verify that the mode keys (Gain, TGC, POWER) and all the		
		Softkeys controls work properly.		
3	CFM	Verify that the mode keys (Gain, ROI cursor POWER) and all		
		the Softkeys controls work properly.		
4	Doppler	Verify that the mode keys (Gain, AUDIO, POWER) and all the		
		Softkeys controls work properly.		
5	ECG	Verify that the ECG controls (PHYSIO key) work properly.		
6	Optional licenses	Verify the basic operations of all optional licenses (CMM,		
		TVM, XStrain)		
7	Re-writable	Save exams on CD/DVD support and then erase them.		
	CD/DVD			
8	USB Pen Drive	Save exams on the USB support. Repeat the operation for both		
		USB ports.		

Peripherals Check

Step	Tool/Part	Description	
1	Printer	If a printer is connected to the system, verify:	
		- Printer cable and connection.	
		- Remote settings and its functioning.	
		- Print quality.	
2	VTR	If a VTR is connected to the system, verify:	
		- VTR cable and connection.	
		- Remote settings and its functioning.	
		- Play back quality and frame position (service	
		software keys)	
		- Audio quality.	

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Chapter

1 - Virtual Navigator

Virtual Navigator¹ is a **MyLab** optional license that provides additional image information from a second modality like CT or MR, during a clinical ultrasound session. By using the second modality the user gains security in assessing the morphology of the ultrasound image.

Virtual Navigator hardware and software are fully integrated in the MyLab systems.

Virtual Navigator licences

Virtual Navigator is available in three different software configurations:

- The **Basic License** offers the basic functions to start with the navigation allowing the manual registration only.
- The Advanced License includes all registration features and the biopsy line display. This licence will aimed to basic support interventional procedures including with implant line, tumour marking, probe position and image recording.
- The **Extended Release** includes the interventional planning and the needle tracking option. This licence will support **the needle tracking capability and treatment planning procedure**.

Features	Basic	Advanced	Extended
Database	✓	✓	✓
Dicom functions	✓	\checkmark	√
Marker Registration		\checkmark	√
Manual Registration	\checkmark	✓	✓
Manual Tuning	✓	\checkmark	√
Internal Marker		\checkmark	√
3D Target		\checkmark	√
Navigation	✓	\checkmark	√
Dicom Viewer	\checkmark	\checkmark	√
Overlap	✓	\checkmark	√
Measurement	✓	\checkmark	√
Video Image acquisition	\checkmark	\checkmark	√
3D Environment	✓	\checkmark	\checkmark
Treatment planning			√
Second receiver tracking			\checkmark

¹ Virtual Navigator is based on NaviSuite software developed by MedCom GmbH

Architecture description

The integration of Virtual Navigator has been done thanks to the great flexibility of the **MyLab** architecture. A strong benefit come form the utilization of the video board dual output and the extended desktop functionality. With this innovative technical solutions it is possible to perform both ultrasound real-time imaging and Virtual Navigator application, simply switching the video output to the display. The choice to use an LCD display allows to collect both video board output and manage via USB connection the output selection (Ultrasound imaging or Navigator ones).



As the previous image shows, the differences with the $\ensuremath{\mathsf{MyLab}}$ standard hardware are:

- The PC unit.
- A tracking system.
- Upper Metallic Covers.
- Additional cable connections.

PC Unit

Virtual Navigator requires a PC unit different from the standard MyLab, including an Ascension PCI Birds board and a VGA Grabber board:

- 9102572600 61XX PC UNIT + Virtual Navigator
- 9102572610 61XX PC UNIT + Virtual Navigator new

Both codes include a VGA cable for the grabber, the transmitter and the receiver.

Ascension PCI Birds board

The Ascension PCI Birds board allows to record the probe spatial position when connected to an electromagnetic tracking system.

VGA Grabber board

VGA Grabber board allows to directly acquire the VGA signal from the **MyLab** auxiliary monitor output and display it in the Navigator main window.

Tracking system installation

The tracking system consists of an electromagnetic transmitter and a receiver (two for the Extended Release). It allows tracking of the probe's spatial position during the ultrasound scanning. The receiver must be installed on the probe used for the ultrasound scan or on the Registration Pen used for registration procedure.



Transmitter



Receiver

The transmitter and the receiver have to be connected to the connector "BIRD TX" and "BIRD RX1" of PCI Bird board respectively. The cable must follow the same path used for the peripherals. Both receiver and transmitter must be positioned as described in the following paragraphs.

In addition, the Virtual Navigator Extended Release allows tracking of the RF needle's spatial position by an additional receiver installed on the needle. This second receiver have to be connected to the connector "BIRD RX2" of PCI Bird board.

The procedures to follow in order to install the receiver on the probes, on the registration pen and on the needle are described in the user manual.

The Electromagnetic Transmitter emits a pulsed DC magnetic field. The receiver 'read the magnetic field value from that position' and the board compute the position respect to the transmitter.



Upper Metallic Covers

Virtual Navigator requires both Upper Metallic Covers and Upper Metallic Small Covers different from the standard **MyLab** units. These different covers allows to position and fix the transmitter by a dedicated belt.

As in MyLab standard units the upper metallic covers are different from 6100 and 6150.

Upper Metallic Cover for 6150 and transmitter positioning

6150 with Virtual Navigator requires both a dedicated upper metallic cover (9102869520) and a dedicated upper metallic small cover (8107946520).

The procedure to fix the transmitter follows:

1. Pass the fixing belt in the upper metallic small cover as showed in the picture, remembering to fix it by the screw.



2. Position the upper metallic small cover and the belt as showed in the next picture:



 Close the hole using the supplied cap

3. Position the upper metallic cover as showed in the next picture:

4. Fix the transmitter



SECTION 9
Upper Metallic Cover for 6100 and transmitter positoning

6100 with Virtual Navigator requires only a dedicated upper metallic small cover (9102903010). The upper metallic cover (9102869000) is the standard one.

The procedure to fix the transmitter follows:

1. Pass the fixing belt in the upper metallic small cover and in the plastic chassis as showed in the next picture:



Even if an eye is present no fixing screw is required.

2.



3. Position the upper metallic small cover and the belt as showed in the next picture:



4. Fix the transmitter



Cables connections

Virtual Navigator requires additional cable connections between PC and LCD monitor and it also requires to modify the USB connection between the PC and the USB port located in the frontal panel of MyLab.

The next two pictures show the PC connectors and the LCD monitor connectors involved with Virtual Navigator.

Note

The board position may change depending to the motherboard used.









Monitor ports in the Virtual Navigator.

VGA grabber connection

Connect the cable code 8830944000 to the "VGA OUT" connector and to the "GRABBER IN" connector in the PC.

USB connections in Virtual Navigator

In Virtual Navigator one of the two USB ports located in the frontal panel of MyLab is not directly connected to the USB port of the PC as in the standard MyLab unit but it is connected to the PC through the USB HUB of LCD monitor as described in the next picture.



USB cables in the Virtual Navigator with articulated monitor arm.

The connection between the USB port of PC unit and the USB HUB of LCD monitor is done by the USB cable code 8830943010 connected to the "USBPC 1" port on the PC and to the "USBLCD IN" port on the monitor. As the other cables directed to the monitor, this cable pass through the column supporting the keyboard and through the articulated arm of the monitor.

The connection between the USB HUB of LCD monitor and the USB port in the frontal panel is done by the USB cable code 8830946010 connected to the free USB port in the frontal panel and to the "USBLCD 1" port on the monitor. The cable pass through the articulated arm of the monitor and through the column supporting the keyboard.

Video and power connections in Virtual Navigator

In Virtual Navigator there is an additional video connection between the PC unit and the monitor in comparison with the standard MyLab units. The power connection is the same of the standard MyLab unit. All the cables pass through the column supporting the keyboard and through the articulated arm of the monitor.



VGA and power cables in the Virtual Navigator with articulated monitor arm.

The main video connection is the same as in the standard MyLab units and the cable labeled "SIGNAL1" must be connected to the SIGNAL 1 port of the monitor (that is the more external).

The secondary video connection is done connecting the secondary VGA output of the PC to the secondary input of the monitor in the following way:

- Connect the male connector of the cable cod. 8830957000 to the port "MON 2" of the PC
- Connect the male connector of the cable cod. 8830958000 (labeled "SIGNAL2") to the "SIGNAL 2" port of LCD monitor.
- The two above mentioned cables are connected as showed in the previous picture (male connector of the cable cod. 8830957000 to the female connector of the cable cod. 8830958000).

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Chapter

2 - Virtual Navigator Software installation, configuration and verification

This chapter deals with the procedures that must be performed in order to install Virtual Navigator on MyLab systems, configure the connections and verify the accuracy of the tracking system.

Software Installation

Virtual Navigator Installation Disk (8620078 XXX) is available to install Virtual Navigator on MyLab.

Perform the following procedure only after the MyLab software release installation has been completed in order to install Virtual Navigator software.

- 1. Start MyLab with the service key inserted.
- 2. Do not start the main software.
- 3. Open the folder \Navi4.0B115 8620078 XXX
- 4. Double click on Setup.exe
- 5. Press Next until calibration files are required
- 6. Select Browse
- 7. Select the folder CalibrationDisk inside the Navi4.0B115 8620078 XXX folder
- 8. Press OK
- 9. Press OK
- 10. Reboot

Software Update

Virtual Navigator Installation Disk (8620078 XXX) is available to upgrade Virtual Navigator on MyLab.

Perform the following procedure only after the MyLab software release installation in order to update Virtual Navigator software.

First of all note down the Dicom setting because they get lost during the updating.

- 1. Start MyLab with the service key inserted.
- 2. Do not start the software.
- 3. Open the folder \Navi4.0B115 8620078XXX
- 4. Double click on Setup.exe
- 5. Select Repair
- 6. Press Next until calibration files are required
- 7. Select Browse
- 8. Select the folder CalibrationDisk inside the Navi4.0B115 8620078 XXX folder
- 9. Press OK
- 10. Press OK
- 11. Reboot

Install the drivers for the PC boards

The additional hardware of Virtual Navigator requires that its drivers is correctly installed.

- 1. Switch MyLab on with the service key inserted.
- 2. Click with the right mouse key on "My Computer" on the desktop and select the voice "Properties". In the new window select "Hardware" then click the key "Device Manager". If there aren't yellow question marks it means that all the drivers for the boards has been correctly installed, so it's possible to skip the next point otherwise follow it.
- 3. Select the folder "Other Devices", click with the right mouse key the devices indicated as "PCI device" and select "Update driver". In the window that will appear select "No, not this time" and "Next". Then select "Install from a list or specific location (advanced)" and "Next". Then select "Install from a list or specific location (advanced)" and "Next". In the next window select "Include this location in the search" and with the "Bromse" key select the folder \CD Unigraf\UFG-01 & UFG-03 Windows Drivers\W2K_XP(VFW)\ from the Virtual Navigator SW pack CD and press "Next". In the window that will appear select "Continue anyway" and at the end select "Finish".
- 4. Always in the folder "Other Devices" check with the right mouse key the devices indicated as "Other PCI bridge device" and select the voice "Update driver". In the window that will appear select "No, not this time" and "Next". Then select "Install from a list or specific location (advanced)" and "Next". Then select "Install from a list or specific location (advanced)" and "Next". In the next window select "Include this location in the search" and with the "Browse" key select the folder \CD Ascension from the Virtual Navigator SW pack CD. At the end of the installation select "Finish".
- 5. From the menu of the windows "Device manager" open the voice "Action" and select "Scan for hardware changes", this will open a window "New Hardware Found" where you have to select "No, not this time" and "Next". Then select "Install from a list or specific location (advanced)" and "Next". In the next window select "Include this location in the search" and with the "Browse" key select the folder \CD Ascension from the Virtual Navigator SW pack CD. At the end of the installation select "Finish".

Global checking

Video Board PC Settings

- 1. Place the mouse in a free area on the desktop, press the right key and select "properties" then "settings". Verify that the monitor nr. 2 is positioned at the right side of the monitor called nr. 1, otherwise with the mouse arrow invert the position
- 2. Select the monitor 2, select the check-box "*Extend my Windows desktop onto this monitor*", set the "*Screen resolution*" to 1280 x 1024 and the "*Color quality*" on "*Hightest (32 bit)*".
- Click the key "Advanced", select the folder "Monitor" and set the "Screen refresh rate" on 60 Hz and press "Ok".
 Press "Yes" if appears a window that requests to confirm the settings.
 Press "OK" to exit saving the settings.

Licence verification

Switch the MyLab on, go in the Licence menu and check that in the options is enabled the Virtual Navigator Licence (Basic, Advanced or Extended).

Note

In the past the Virtual Navigator option was enabled with a parallel dongle key. It is still possible find such systems. The only difference from the user point of view is that the licence results enabled even no code is written.

Software verification

When the Virtual Navigator software is properly running the Software-key **NAV/DB** is displayed in the Exam Start window.

To verify if the USB switch is properly working, press **NAV/DB**: the system automatically switch in the Virtual Navigator DataBase.

Video Grabber

To check if the Video grabber is properly working:

- Load test data from the service CD
- Select one probe enabled with Virtual Navigator and start an examination
- Go in manual registration and check the image. The ultrasound signal has to be displayed in the left part
- Changing depth the ultrasound images has to change



Tracker accuracy test

Three different tests allow to evaluate the precision of the tracker system.

Pressing the System Setup icon in Virtual Navigator a calibration test for pen, needle and probe can be performed. At any time the accuracy and performance of the tracking devices (pen, needle and probe) can be verified using this function.

Once System Setup is pressed choose "Pen Test", "Needle Test" or "Probe Test", then follow the instruction displayed.



Fix the receiver to the registration pen tool as described in the user manual.

Test 1

Take the transmitter at a distance about 35 cm and record two positions of the same point using the pen tool: place the pen tip on a point and press "Record P1", then leaving the tip of the pen in the same point tilt the pen tool and press "Record P2". The test result distance has to be not higher than 3 mm.





Procedure

Pen Test

Test 2

Take the transmitter at a distance about 35 cm and perform a simple distance test using the pen tool: place the pen tip on a point and press "Record P1", then move to a second point with distinct distance (for instance using a ruler) and press "Record P2". The displayed distance must match the real distance within an error of 1mm/5mm.

If the error is greater remove any metallic object around the test area and repeat.



IF THE RESULT IS GREATER THAN 3-4MM MEANS THAT YOU HAVE ENVIRONMENTAL DISTURB. REPEAT THE ABOVE PROCEDURE ON A CARTOON BOX POSITIONED FAR FROM EVERYTHING OR ON THE FLOOR OR IN A DIFFFERENT ROOM.

Pen Test	Need	le Test	Probe Test
Needle-Test	Select the co and place the Record then t by using diff Record P1	rrect needle needle tip wo positions erent needle Record P2	PAD15_2
		Close	

Select the correct needle in the drop down menu and place the needle tip on a single position.

Record then two positions of the same point using different needle orientations.

In this case the test is strongly affected by the flexibility of the needle and from its length. In any case the test result distance has to be not higher than 5mm.

Needle Test

Note

In case of bigger error repeat the test trying to maintain the needle straight in the 3D space to minimize the needle bending.

The bending effect is anyway minimized by the use of the biopsy kit. The system consider as virtual needle the needle projection on the biopsy line and not its real position in the space. Due to this always rely only on the needle visualized on the ultrasound image.



Use the ultrasound image to record a single point. Press "Record P1" to activate the ultrasound image and generate an image of the point and press **FREEZE**. Mark the point using the trackball cursor and close the ultrasound image.

Record the second image in the same way using "Record P2".

The test result distance has to be not higher than 5 mm.

DICOM Configuration

The data can be loaded:

- 1. By DICOM CD
- 2. By USB stick with DICOM image inside
- 3. Stored directly from PACS/CT/MRI console
- 4. Using a Query/Retrive DICOM connection

DICOM configuration for image sending and receiving.

The NaviSuite Database can send images to a DICOM archive (also called PACS, Storage SCP), and can receive images from a DICOM application (a PACS or a modality, Storage SCU).

Probe Test

To perform a DICOM Send open the pop-up menu right-clicking over a file in the database, and choose Dicom File Send, or go to the Dicom File Send dialog in the Dicom Import module to send files from the file system of your computer.

To configure these services, from the NaviSuite Database, open the "Administration->Settings" panel and select the "Dicom I/O" tab, configuring the various attributes according to the following explanation.

Settings	×
Dicom I/O Dicom Archive	
DICOM Interface	
Default IP address:	32.168.31.152
Default DICOM Port: 11	04
use little-endian:	
Own AE title:	EDCOM
Target AE title:	BIT-DEMARCO
Direct DICOM Import	
Import Directory:	Δ
Search Direct	ory
Access Import Directory:	
ОК	Cancel Apply

- a) **Default IP Address**: The IP address of the DICOM archive (Storage SCP) the images will be sent to.
- b) **Default DICOM Port**: The TCP Port where the archive is listening for incoming images.
- c) use little-endian: normally not needed, leave it unchecked.
- d) **Own AE title**: The Application Entity Title of the Virtual Navigator for using the Storage Services. This information is case sensitive.
- e) **Target AE title**: The Application Entity Title of the archive the images will be sent to. This information is case sensitive.

For receiving the images, the NaviSuite Database does not need any special configuration.

Normally, the TCP port where the NaviSuite Database listens for incoming images is the default DICOM one, that is *port 104*. In case of doubts you can verify this in the Registry (using regedit.exe), looking to the (decimal) value of PortNumber in the key HKEY_LOCAL_MACHINE\SOFTWARE\MedCom\MCStoreSCP.

Normally there is no reason to change this registry value; please note that it is not guaranteed that other port numbers work in the MyLab; in particular, NEVER use the port 5000, that is used by the Virtual Navigator to communicate with the MyLab software.

To summarize:

- 1. write down the local IP Address of the MyLab, the listening port (104 unless changed in the registry) and the NaviSuite Database "Own AE Title" and give this information to the PACS administrator;
- 2. ask the PACS administrator to give you the IP Address, TCP Port and AE Title of the PACS, and put them into "Default IP Address", "Default DICOM Port" and "Target AE Title".
- 3. be careful about the AE Titles: they are case sensitive.

DICOM configuration for Query/Retrieve.

The NaviSuite Database, besides passively receive the images from a Storage SCU application, can also query a DICOM archive (PACS) to find and get the needed images from it (Query/Retrieve SCP), using the Query/Retrieve services. The images have to be sent to the NaviSuite Database using the above configuration for receiving the images (IP Address of the MyLab, incoming TCP Port 104 unless changed in the registry, "Own AE Title").

To configure this service, from the NaviSuite Database, open the "Administration->Settings" panel and select the "Dicom Archive" tab, configuring the various attributes according to the following explanation.

S	iettings			×
	Dicom I/O	Dicom Archive		_,
	IP-Addres	:\$:	192.168.31.152	
	Port:		1104	
	Archive A	E:	EBIT-DEMARCO	
	Our AE:		MEDCOM	
	C-Move D	estination AE:	MEDCOM	
		OK	Cancel <u>Apply</u>	

- a) **IP-Address**: The IP address of the DICOM archive (Query/Retrieve SCP).
- b) **Port**: The TCP Port where the archive is listening for incoming query/retrieve commands.
- c) **Archive AE**: The Application Entity Title of the archive. This information is case sensitive.
- d) Our AE: The Application Entity Title of the Virtual Navigator for using the Query/Retrieve Services. This information is case sensitive. It should be the same of "C-Move Destination AE" and also the same of "Own AE Title" present in the "Dicom I/O" tab: no need to use different ones.
- e) **C-Move Destination AE**: The Application Entity Title of the Virtual Navigator for receiving the images (NaviSuite's StoreSCP server). *It should be the same of "Our AE" and also the same of "Own AE Title" present in the "Dicom I/O" tab: no need to use different ones.*

To summarize:

- 1. write down the local IP Address of the MyLab, the listening port (104 unless changed in the registry) and the NaviSuite Database "Our AE" and give this information to the PACS administrator;
- 2. ask the PACS administrator to give you the IP Address, TCP Port and AE Title of the PACS for the Query/Retrieve, and put them into "IP-Address", "Port" and "Archive AE". Normally this will be the same of the information you already collected for DICOM sending, unless you want to send the images to a PACS different from the one you use for the Query/Retrieve;
- 3. be careful about the AE Titles: they are case sensitive.

DICOM configuration for Multi-phase

The DICOM loader is able to identify multi-phase series. There is the possibility by use a DWORD registry entry to customize the loader using different Dicom TAG:

AcqTag --> use AcquisitionNumber tag

SeriesNumTag -> use SeriesNumber tag

MultiSlice -> Old style from Navigator 1.0

In relation to the tag of Dicom files loaded is possible configure the above registries placed in HKEY_LOCAL_MACHINE\SOFTWARE\MEDCOM\NAVISUITE

 The StoreSCP server listens on IP-ports for incoming dicom C-STORE requests. For each port it can be defined which dicom transfer syntax is accepted. During installation the following default ports are defined:

Port 104: Any Transfersyntax according to association. In case that more than one transfer syntax is proposed the StoreSCP selects the first proposed transfer syntax.

On order to setup different ports and/or restricted transfersyntaxes the following Registry Entries are responsible:

Path:

HKEY_LOCAL_MACHINE\SOFTWARE\MedCom\MCStoreSCP Key:

> Line0Port DWORD PortNumber Line0TSyntax DWORD TransferSyntax Number

Line1Port DWORD PortNumber Line1TSyntax DWORD TransferSyntax Number ... Line4Port DWORD PortNumber Line4TSyntax DWORD TransferSyntax Number

For Transfersyntax the following values are defined:

 $0 \rightarrow$ Any Transfersyntax according to association – In case of more than one proposed transfersyntax the first one will be selected.

Please Note: Some StoreSCUs propose a transfersyntax (TS) that they are actually not capable off, for these cases the StoreSCP can restrict the accepted TS to the values below.

- $1 \rightarrow$ Implizit Little Endian
- $2 \rightarrow$ Explizit Little Endian
- $3 \rightarrow \text{Explizit Big Endian}$
- 4→ JPEG Baseline
- $5 \rightarrow$ JPEG Extended
- $6 \rightarrow RLE$

Currently up to 5 different ports can be defined. Please note: The Store-SCP server is able to receive on all

ports and on

multiple connections per port in parallel.

61XX - SERVICE MANUAL

Chapter

3 - Virtual Navigator troubleshooting

Generic problems

The system do not switch in Nav/DB

- Check that monitor is ON and reboot. The USB HUB on the monitor was not active at system boot.
- Check USB cables are plugged.

The Grabber does not visualize the US image or is yellow

- Check cable connection.
- The grabber is not properly initialized. Reboot the system. If the problem persist use the UFG9 exe file inside the SW pack to check the grabber functionality.

The numbers are not moving

- Look at receiver connection if it is well plugged
- Enter with service and using the SW pack PCIBIRD.exe check the ascension functionality

The Ascension does not give the right measurements

- Choose a different location to test maybe you have environmental disturbs
- Verify that the chip is properly inserted and clean the contact.



Hardware configuration error code description

Impossible to register the system

DETECTION	IDENTIFICATION	RECOVERY
Transmitter & Receiver not properly	Check that all numbers moves at the receiver movement with the system setup . If not go in the PCI cube environment and verify that the sensor is properly displayed and they	Screw and lock the cables to the PC to avoid that MyLab movement may disconnect it. Verify the receiver connection taking care to put down the cover before connect it.
connected or damaged	data properly displayed and they sn). Verify also the Err Log Tab in the PCI cube.	If or the transmitter or the receiver well connected but are not properly described in PCI cube environment change the Ascension board.
Board broken	Go in System Setup and verify that all numbers moves at the receiver movement. If not go in the PCI cube environment and verify the error Log. When the board is broken a "Fail to Initialize" message appear and all board description fields are not filled.	Shut down the PC, disconnect PC power cable, wait one minute to discharge capacity, open the PC, disconnect the board clean the contact with
Board damaged	Go in System Setup and verify that all number moves at the receiver movement. If yes acquire two times the same points with the registration pen tilted taking care to have the tip in the same point (use a skin marker to better perform the procedure). The distance between the two pints has to be more than 5 cm.	alcohol, clean the contact with alcohol, clean component contacts reinsert the board and start again the PC. If the system still do not work Substitute the Ascension Board

The system always give a not optimal registration and the overlap error is great and change changing the probe tilting

DETECTION	IDENTIFICATION	RECOVERY
Skin Marker movements	The system gives big error in each line marker	Repeat the CT scan
Receiver bad positioned on the holder	Great error between the two modalities during the overlap	Connect properly the receiver to the holder verifying that the receiver is inside the registration pen, well fixed on the pivots and the cable is inside the proper groove.
Registration Pen damaged	The tip is tilted or unscrew from the body, pivots are disconnected	Substitute the registration pen
Wrongly marker acquisition	Great error between the two modalities during the overlap	Reacquire the marker taking care to surround with the convex part of the registration pen tip the marker tin ball
Transmitter to far	On CT screen part a message appear	Put the transmitter around the scan area. The distance between transmitter and receiver has to be a range of 10-70 cm
Wrong Pen calibration file	Verify that the D:\ProgramFile\NaviSuite\penclb.de f is equal to the file present on the Service CD\Navisuite\CalibrationDisk\PAL or NTSC penclb.def	Copy the file in the CD on the PC NaviSuite folder. Un-check in the file properties the "Read-only" properties.
Magnetic interference	Go in System Setup and verify that all number moves at the receiver movement. If yes acquire two times the same points with the registration pen tilted taking care to have the tip in the same point (use a skin marker to better perform the procedure) and verify that the distance between the same point is greater than 2-5mm. Repeat the procedure acquiring two points to a known distance (10-20cm) and verify that the system measure the real distance with an error greater than 5mm. Repeat the measurement taking two points orthogonal to the previews and verify that the error changes. In general for different orientation of the two points the measured distance has different error. Repeat the procedure in a different location (on a box on the floor) far from electronics equipments or steel, iron, power cables and verify that the error decrease to the nominal value.	

The Virtual Navigator does not recognize the probe. A message appear on the CT part

DETECTION	IDENTIFICATION	RECOVERY
Wrong probe selection		Verify on user manual which probe are admitted to work with the Virtual Navigator.

Chapter

1 - Network Connection and DICOM

This section deals with the configuration for enabling the supported network connection and DICOM functions.

MyLab allows to share data in a network by accessing a network directory, by DICOM sending and by DICOM printing.



Network directory: when a network connection has been configured and enabled to access a network directory (that is a shared folder on another system) the network interface icon is displayed and the following functions are available:

- Multimedia export to a Network Directory
- DICOM archiving to a Network Directory
- Proprietary format copy to a Network Directory

DICOM sending: when a DICOM connection has been configured and enabled the DICOM interface icon is displayed and the following functions are available:

- DICOM Storage to a DICOM Server
- DICOM Storage Commitment (advanced features)
- DICOM Worklist from a DICOM Worklist Server
- DICOM MPPS (advanced feature)



DICOM interface icon

DICOM printing: when a DICOM printer has been configured, enabled and connected to a **REC/PRINT** button, the DICOM print icon is displayed and the print can be sent to a DICOM printer.

Network Connection

In order to connect a system to an existing Ethernet 10-Base T or 100-Base T network (i.e. in a hospital) a UTP Cable (CAT-5) is needed. This cable also called "patch cable" has RJ45 connectors on both sides.



Note

The Network board inside 61XX works at 100 Mbit per second but will automatically drop to 10 Mbps when needed.

The network plug on **MyLab** is on the rear panel of the system.

Before to proceed with the network settings it is necessary to know if **MyLab** is to be connected:

A) in a network environment with:

- A1) Static IP Address
- A2) DHCP (Dynamic Host Configuration Protocol)



Normally when connecting to the wall network plug, you should use a straight cable (see next figure).

RJ45 STRAIGHT	
	Wires color has to be in the same order

B) in a Point-to-Point configuration

- Static IP Address



When connecting point-to-point, you have to use a crossover cable (see next figure).

RJ45 CROSSOVER	
	Wires color has to be in different order

Once the hardware connection has been performed, the TCP/IP protocol of the system should be configured.

DICOM Server is not involved. Data are moved to a PC shared folder.

To set up the network connectivity two steps are necessary:

- 1. Configure the unit Network Settings:
 - a. With the service key
 - b. Without the service key
- 2. Set the Map Network Drive Configuration

Step 1-a - Configure the Unit Network Settings with service key

Before starting the configuration procedure, determine characteristics of the network like the addressing mode (static or DHCP), the default gateway IP address, if a DNS server is present and so on. Thus it is suggested to contact the network administrator before proceeding with the configuration.



The procedure can be activated only if the Service key is inserted before switching the unit on and it allows to completely configure the network (IP address, DNS, etc.).

See Section 5, chapter 2 for further details on Hard Disk Drive Configuration Menu

- 1. Right-click the HDD icon and select "Network Configuration".
- 2. Right-click on the "Local Area Connection" icon an select the "Properties" option.



3. In the "General" tab select the "Internal Protocol (TCP/IP)" connection and press the "Properties" button.

Local Area Connection Properties	×
General Authentication Advanced	
Connect using	
🐲 VIA Rhine II Fast Ethemet Adapter	
Configure	
Client for Microsoft Networks GoS Packet Scheduler GoS Packet Scheduler GoS Pinter Sharing for Microsoft Networks Themet Protocol (TORVIR)	
Install Uninstall Properties	
Description Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.	
Show icon in notification area when connected	
OK Cancel	

Note

In case of network environment it is necessary to contact the Network Administrator

- 4. Depending on the way **MyLab** is connected to the network, there are three different ways to complete this step:
 - Network environment with static IP address (case A1); accordingly to the Network Administrator set the Unit IP Address and Network Subnet Mask.

Internet	Protocol	(TCP/IP)	Properties	? ×
General				
				supports nistrator for
🗢 Obta				1
_ O Use				· · · · · · · · · · · · · · · · · · ·
			192.168.005.0	03
			252 . 255 . 255 .	0
O Obta	in DNS server			
⊢O Use				
			A	dvanced
			OK	Cancel

• Network environment with DHCP (case A2); select the "Obtain the IP address automatically" option

Internet Protocol (TCP/IP) Properties	? ×
General Alternate Configuration	
Obtain an IP address automatically	
Use the following IP address:	
iP address:	
Subnet mask:	
Default gateway:	
 Obtain DNS server address automatically 	
Use the following DNS server addresses:	-
Preferred DNS server:	
Alternate DNS server.	
Advanced	
OK Cance	el l

• Point-to-Point environment with static IP address (case B); select an IP address and a related Subnet Mask.



Note

The PC for the connection will have an IP address on the same subnet and different from the one selected for the US.

Note

Left-clicking the HDD icon and selecting "Properties" will display a message box with the IP present Host Name, IP Address, free HD space and Application Entity Title of the MyLab.



Step 1-b - Configure the Unit Network Settings without service key

It is possible to set up the network IP address without using the service key: This procedure does not allows the DNS configuration; if the network requires it, please use the procedure described before.

Right-clicking the Hard Disk icon and selecting "IP Address Configuration" shows a panel in which you can configure the IP Address.

● USE THE FOLLOWING IP ADDRESS	
IP ADDRESS:	192 · 168 · 39 · 214
MASK:	255 · 255 · 255 · 0
GATEWAY:	192 · 168 · 39 · 254
♥ GET AN IP ADDRESS AUTOMATICAL	LY
ОК	CANCEL

The panel allows to define a dynamic or static addressing. In this latter case it is possible to set or modify the IP address, the subnet mask and the gateway address.

In case of static addressing, set the IP address, the Subnet Mask and the Gateway. When you do not need any gateway, just put 255.255.255.0 for the Subnet Mask and repeat the IP address of the MyLab for the Gateway.

Please note that selecting "GET AN IP ADDRESS AUTOMATICALLY" (that is, use the DHCP) could not work in DICOM environment, because the DICOM Archives and Printers normally need to know the IP Address of the MyLab to allow it to send/print images and IP addresses automatically assigned can change at every reboot.

When using this panel instead of the Windows XP network configuration, you cannot enable the DNS, so you will need to input the numeric IP Address of the DICOM Archives and Printers.

Step 2 - Set the Map Network Drive

Set the Map Network Drive option after having rebooted the system without the service key.

From Real Time press **MENU** then **NETWORK DIRECTORY**; the system displays:

RTVE DESCRIPTION	2011	ENABLED
KIVE DESCRIPTION		ENABLED
ADD	EDIT	DELETE

Procedure

- Place the cursor on the **ADD** button and press **ENTER**.
- The network directory configuration window is displayed:

DESCRIPTION:		
DRIVE:	M:\ E	
CONNECT DRIVE	DISCONNECT DRIVE	
Please, check "Reconnect at logon" in the Map Network Drive window. If the "Browse for folder" window doesn't show a network folder, please type its full path into the "Folder" field.		
ENABLED	N	
ОК	CANCEL	

Before going on with the procedure, disconnect the drives which are no longer used.

On a remote PC define a directory, share that directory and make it accessible to a local user.

•



Place the cursor on the **CONNECT DRIVE** button and press **ENTER**.

• (Specify the PC name in) Enter the folder path in the "Folder" field in the Map Network Drive window, making sure to have checked the "Reconnect at logon" option Press "Finish".

Map Network Drive	×
	Windows can help you connect to a shared network folder and assign a drive letter to the connection so that you can access the folder using My Computer.
	Specify the drive letter for the connection and the folder that you want to connect to:
	Drive: Y:
	Folder: \\BERDONDINI\SHARED Sources
	Example: \\server\share
	Reconnect at logon
	Connect using a <u>different user name</u> .
	Sign up for online storage or connect to a network server.
	< Back Finish Cancel

• The system will shows the login window. Enter username and password defined on the PC that contains the folder and **check the option "Remember my password"**. Use.

• Enter a folder description and check the "Enabled" option to use it as network directory.



When a network drive is configured and enabled, it will appear in the list of the media available for archiving and exporting exams.

To remove a network directory press the **DISCONNECT DRIVE** button and select the folder to be removed.



The network directories are listed in the Remote Archive icon: place the cursor on the icon and press **UNDO**. In Archive Review select the desired network directories and press **ENTER** to access to the remote archive.
DICOM Principles

DICOM (Digital Imaging and Communications in Medicine) is a standard (that is, a set of rules) for medical images and information exchange between different devices (computers, medical system, etc). DICOM's basic features are listed below:

- It encloses a communication protocol with detail specifications about image and information transfer
- It defines an "open system" context allowing the connectivity among different manufacturers.
- It's based on standard computer network technologies and protocols (Ethernet, TCP/IP, removable media like CD-R and USB Pen drives).

The standard is used and supported because:

- DICOM is the only Medical Imaging and Communications Standard accepted worldwide.
- DICOM is used for image transfer and archiving, search and retrieve from archiving systems and net printing in thousands network system installations.
- DICOM is having an increasing integration with RIS/HIS (Radiology/Hospital Information System).
- DICOM evolves in function of real needs.

A scheme of typical and complete structure of a network installation is shown in the following picture.



The DICOM standard establishes, through the network (Intranet/Internet) or removable media exchange, a common language among:

- modalities (US, MR, CT, CR, etc.),
- medical printers (laser cameras),
- PACS (Picture Archiving and Communication Systems: archive, viewing stations),

- medical post-process workstations (for MPR, therapy planning, surgical navigation, etc.),
- Information systems: HIS/RIS (Hospital/Radiology Information System).

DICOM most used services are showed in next image:



DICOM Server Configuration

The DICOM functions available with **MyLab** are indicated in the Esaote DICOM Conformance Statement.



To set up the DICOM connectivity (for Storage, Worklist, Print) four steps are necessary:

- 1. Configure the Network Settings.
- 2. Configure the General DICOM Setting
- 3. Configure the specific DICOM Settings of the desired services (Storage Server, Worklist, MPPS, Print and Storage Commitment).
- 4. Ask the administrator of the Storage Server, Worklist Server, DICOM printer, to enable **MyLab** to work with them.

1 - Network Settings Configuration

Refer to the previous paragraph "Network Connection".

Note

Normally it will not be possible to use the DHCP in a DICOM network: ask the Network Administrator to give you an IP Address and use the static IP setting instead.

2 - General DICOM Configuration

From Real Time press **MENU** then **DICOM CONFIGURATION**, the system displays the DICOM Configuration Menu:

TCP LISTEN PORT:	11112		
STRESS IMAGES			
• BY STAGE			
OBY VIEW			
OSINGLE VIEW			
Warning: to activate the m PORT, you need to restart	nodifications of the LOCAL AE	TITLE and TCP LISTE	EN

The configuration menu is organized in tabs; place the cursor on the desired tab and press **ENTER** or use the NEXT and PREVIOUS keys to access to it. The FACTORY SETTINGS sets the factory presets.

OK and CANCELBoth in the main menu and in the sub-menu, the OK key exits from the menu
saving the settings while the CANCEL key without saving.

In the **GENERAL** tab you can set the local Application Entity Title (AE Title) of the **MyLab** (it is the DICOM name of the **MyLab**). The factory setting is "MyLab". Normally you do not need to change it unless you have more than one **MyLab** in the same network.

The "TCP LISTEN PORT" field is related to the Storage Commitment DICOM class and defines which port **MyLab** uses for receiving Storage Commitment messages (only needed for Storage Commitment).

```
Note
```

Pay attention to the Capital letters: all the AE Titles are case sensitive.

It is necessary to restart the unit after changing with above settings.

The options of the "Stress Images" field defines how the stress echo images are sent (by stage, by view or as single view). For the compliance you should select "single view".

3 - Storage Server, Storage Commitment, Worklist and MPPS Configuration

The configuration menus of these DICOM classes are similar and allow the user to add (ADD option), delete (DELETE option) one Storage server, one worklist server etc. or to modify (EDIT option) its parameters.

DESCRIPTION MESA JDICOM	AE TITLE MESA_IMG_MGR JDICOM	HOST NAME/IP ADD PCPAMPANA MOPAMPANA	RESS ENABLED YES YES	
ADD	EDI	Т	DELETE	

You need to ask the administrator for the IP Address, AE Title and TCP port of the DICOM devices (and model of the DICOM printer) you want to work with.

Note

To use DICOM functions, a static IP address is normally required.

		ODCANTZED
PREVIOUS NEXT	DEPCKIPTION:	ORGANIZER
GENERAL STORAGE PRINT	AE TITLE:	ORGANIZER
STORAGE:	HOST NAME/IP ADDRESS:	192.168.4.345
DESCRIPTION BIOPACS	PORT NUMBER:	21168
	CONNECTION LOG:	TEST CONNECTION
ADD		CANCEL

Adding an item Once ADD is pressed the following windows is displayed:

This box allows to set:

- DESCRIPTION is a mnemonic name to identify the item you are configuring.
- AE TITLE: fill with the DICOM name of the server. To be provided from the administrator. For BioPacs use BIOPACS; for Organizer use ORGANIZER. Take care that this name is case sensitive.
- Host name (or IP address): enter the Server IP address or Host Name
- Port number: the Server TCP port used to receive data from MyLab. To be provided from the administrator. For BioPacs/Organizer use 21168 unless it has been changed on BioPacs/Organizer.
- The Storage Commitment class also requires the setting of the Response Timeout (in minutes). It is the maximum time to wait for a response from the server.
- The TEST CONNECTION key checks the connection status; it sends a Verification (C-ECHO) DICOM message to the server to verify if at the configured IP Address and TCP port there is a listening DICOM application. The results of the test appear scrolling backward (last line first).

Note

Normally this test does not check the AE Titles: the server will reply with a successful message even if the AE Titles are misspelled.

The DICOM Server is used only when the "Enabled" field is selected. You can enable as many storage servers and printers as you want but just one server for Worklist, Storage Commitment and MPPS.

For the storage, in the "SERVER" tab you will be able to select the configuration of the DICOM archive to send the images to.

Ask the administrator of the configured servers and printers to enable MyLab to work with them. She will need the IP Address and AE Title of MyLab.

Note

Do not enable Storage Commitment and MPPS if the DICOM Server is not configured to accept them.

DICOM Printer Configuration

The "PRINT" tab lists the configured DICOM printers. From the tab it is possible to add (ADD key) or to cancel (DELETE key) any DICOM printer in the list and to modify (EDIT key) their settings and print layout. The FACTORY SETTINGS key sets the default settings for the selected DICOM printer.

For every DICOM printer the profile configuration panel can be opened by selecting the printer and pressing "VIEW PROFILES".

Once a DICOM printer is correctly configured, it is possible to assign a DICOM printer profile to each of the REC/PRINT buttons (1, 2, and 3 if present) via the PERIPHERALS environment of the MENU in the way of the Windows PC printer. Different DICOM printer profiles can be active at the same time, for one or more DICOM printers.

Once ADD (or EDIT) is pressed the following windows is displayed:

Adding or modifying a Printer

MODEL:	KODAK_8150-8200
DESCRIPTION:	Dryview8150
AE TITLE:	DV8150
HOST NAME/IP ADDRESS:	192.168.52.10
PORT NUMBER:	5040
CONNECTION LOG:	TEST CONNECTION
<u>.</u>	2 7 7
ENABLED	
ОК	CANCEL

This box allows to set:

- MODEL: every DICOM printer connected to **MyLab** has to be selected among the available ones in this curtain menu. If the desired model does not appear in the list, it is normally possible to print using the "GenericPrinter" model. In this case the printer software will need to be configured to correctly print images from MyLab.
- DESCRIPTION is a mnemonic name to identify the printer you are configuring.
- AE TITLE: fill with the DICOM name of the printer. To be provided from the administrator.
- Host name (or IP address): enter the Printer IP address or Host Name
- Port number: the Printer TCP port used to receive data from MyLab. To be provided from the administrator.
- The TEST CONNECTION key checks the connection status; it sends a Verification (C-ECHO) DICOM message to the printer to verify if at the configured IP Address and TCP port there is a listening DICOM application. The results of the test appear scrolling backward (last line first).

Note

Normally this test does not check the AE Titles: the printer will reply with a successful message even if the AE Titles are misspelled.

The DICOM printer is available only when the "Enabled" field is selected. You can enable as many printers as you want.

Print Profiles Selecting one of the listed DICOM printers and pressing VIEW PROFILES opens the list of the Printer Profiles for the printer.

DESCRIPTION	AE TITLE	HOST NAME/IP ADDRESS	ENABLED
DVT-GENERIC-GRAY DVT-GENERIC-COLOR DRYJIEW8100 DRYJIEW8100 CMII000 DryView8150	DVT DVT 8900 CMI1000 DV8150	РСРАМРАЛА РСРАМРАЛА РСРАМРАЛА 192.168.52.13 192.168.52.3 192.168.52.10	YES YES YES YES YES YES
ADD	ED VIEW PI	IT ROFILES	DELETE

When adding a new printer, the pre-defined printer profile is inserted in the list.

For every configured DICOM Printer it is possible to prepare one or more DICOM Printer Profiles according to the printing needs. For a given printer model, only the valid choices will be shown.

The EDIT key modifies the selected printer profile, the DELETE key cancels it. The ADD key adds a new profile for the selected DICOM printer.

Adding or Modifying a Print Profile Once ADD (or EDIT) is pressed the following windows is displayed:

MODEL:	KODAK_8150-8200
DESCRIPTION:	DryView 8150
LAYOUT:	STANDARD\4,3
	ROWS: 3
	COLUMNS: 4
FILM ORIENTATION:	LANDSCAPE
FILM SIZE:	14INX17IN
MEDIUM TYPE:	BLUE FILM
COLOR CAPABILITY:	GRAYSCALE
NUMBER OF COPIES:	1
ОК	CANCEL

This box allows to set:

- DESCRIPTION is a mnemonic name to identify the printer profile you are configuring.
- LAYOUT allows to set the print layout. Only the "STANDARD\c,r" DICOM formats are allowed, where c is the number of columns and r the number of rows. If you select "Landscape" for the Film Orientation you will probably need a Layout in which the number of the columns is greater than the number of the rows.
- OTHER FIELDS allows to set the orientation, the size, the medium type (sheet, film..), the colour capability (gray scale or color) and the number of copies. Use the default values if you do not know. Using "DO NOT SEND" MyLab will not send any information on this attribute and the printer will use its defaults (or can be configured on its side).

Report and Quality DICOM Options

Report Folder

In the Report tab you can decide the way to export (to DICOM server or CD-R or USB) the measures and report.

REPORT EXPORT	PACS		
• EXPORT TO OTH	ER SERVERS		
ODO NOT EXPORT			
CEXPORT DICOM	STRUCTURED REPORTS		

MyLab allows to set one of the following exporting options for the report format:

- Export to Biopacs. Report will be put in a proprietary DICOM attribute, that the BioPacs/Organizer can read. BioPacs/Organizer are Esaote products for ultrasound exam management.
- Export to other servers. Report will be written in Secondary Capture images that everybody can read.
- Export DICOM structured report. Refer to the DICOM Conformance Statement to know which applications are supported by the structured report; when not available, **MyLab** automatically uses the DICOM secondary capture image format.

On the same menu the user can set not to export the report.

Note

The Report Export could require some more attention. At first connection test, it's suitable to choose the option "Do not Export".

Quality Folder In the Quality tab you can set the quality levels both for clips and single images for any DICOM archiving operation (on server or on any other medium).

NERAL STORAGE SC WOR	KLIST MPPS PRINT REPORT QUALITY
CLIP QUALITY	
⊖HIGH (LOSSY JPEG)	⊙MAXIMUM (UNCOMPRESSED)
⊙MEDIUM (LOSSY JPEG)	Warning: this option should be used
⊙ LOW (LOSSY JPEG)	problems. Please note that it heavily affects the converted clips size and the conversion time.
HIGH (INCOMPRESSED)	
OLOW (LOSEY JEEG)	

For clips **MyLab** allows to set one of the following values: HIGH (high quality, low compression), MEDIUM (medium quality, low compression), LOW (low quality, high compression) and MAXIMUM (best quality, no compression).

The clips are sent and stored using the JPEG lossy compression: every clip is a single DICOM image, but the frames are individually compressed using JPEG.

Clips can be left uncompressed. This option has to be set only when the DICOM Server cannot receive JPEG compressed clips.

The uncompression option has to be set only when incompatibility occurs as the compression hugely affects the dimension of the converted files and thus the conversion time. MyLab or the server sould have errors for long clips.

For images **MyLab** allows to set one of the following values: HIGH (no compression), MEDIUM (RLE lossless compression) and LOW (JPEG lossy compression).

The settings for the images also apply to the DICOM Media Storage (on CD/DVD or USB or Network Directory.

Note

SECTION 10

During the first connection test, it's better to select an exam without clips and choose for images the option "High Quality", that every DICOM server should support, and not sending clips.

WARNING

Checking MyLab70 Configuration for DICOM

Saving and sending images

When closing the current exam ("START END" button), by checking the "ARCHIVE" selection, you can

- archive it in proprietary format in the local database ("DB");
- save it in DICOM format on a CD-R or CD-RW ("CD");
- save it in DICOM format on a Pen Drive ("USB");
- send it to a DICOM server ("DICOM SERVER").

By selecting one or more exams from the "ARCHIVE REV." panel, and pressing the "DICOM" smart key, you can

- save them in DICOM format on a CD-R or CD-RW ("CD");
- save them on a Pen Drive ("USB");
- send them to a DICOM server ("DICOM SERVER").

In every case, you can decide to anonymize the images, removing the DICOM attributes that could identify the patient.

Before saving the images on a CD-RW, you can erase it by selecting the "ERASE DEVICE" item in the menu that can be accessed by right-clicking the CD icon.

In case of failure, a red sign will appear over the corresponding icon (CD, USB or Network); left-clicking over the icon will show the "OPERATION" panel with the list of the failed and successful operations. It is possible to retry the failed operations. Retry could not work when performed too long after the problem happened. In this case you should completely repeat the failed operation without using retry. To remove the red sign select the "RESET FAILURE FLAG" from the menu that appears left-clicking over the icon.

Printing images

You can print in DICOM every displayed image, by pressing the REC/PRINT buttons configured for a DICOM printer.

Every time that you press the REC/PRINT button, the image is added to the current film, that will be actually printed when the number of images for that format have been added.

The images printed from the real time and "EXAM REV." environments are added to a different film from the images printed from the "ARCHIVE REV." environment.

When closing the current patient ("Start End"), the current films is printed.

In case of failure, a red sign will appear over the corresponding icon; left-clicking over the icon will show the "OPERATION" panel with the list of the failed and successful operations. It is possible to retry the failed operations. Retry could not work when performed too long after the problem happened. In this case you should completely repeat the failed operation without using retry. To remove the red sign select the "RESET FAILURE FLAG" from the menu that appears left-clicking over the icon.

From the above menu it is also possible to

- force the printing of the current film ("PRINT NOW...");
- delete all the images already added to the current film ("RESET ADDED IMAGES").

Troubleshooting DICOM Network sending and printing

In case of DICOM problems, the first thing is to verify that the network is working correctly. To do this follow these steps:

- Reboot MyLab with the service key inserted.
- Start menu will pop up;
- Select "Run..." from the Start menu and input "cmd"
- in the command window try to ping the gateway (if any) and the destination server and printers.

en C:\WINDOWS\System32\cmd.exe
Microsoft Windows XP [Version 5.1.2600] (C) Copyright 1985–2001 Microsoft Corp.
C:\Documents and Settings\EService>PING PCCARCAGNI
Pinging PCCARCAGNI.fi.esaote.it [192.168.9.72] with 32 bytes of data:

When you are sure you can ping the destination(s) from the MyLab, perform a verification. Very few servers and printers do not correctly reply to the verification, so if the ping works and the verification does not work try to send/print anyway.

If the ping and the verification work, and the sending/printing does not work, double check the AE Titles on both sides. After double checking all the configuration on both sides, if the error message in the operation panel is not enough to understand what is not working, write down the error(s) that appear in the OPERATIONS panel (select the item and press DETAILS), and collect the log files.

Please note that Windows XP SP2 and SP3, by default, enables the internal firewall, so that, if you want to send data to a server installed in a PC with such Operating System, it is possible that from the PC you can ping the MyLab, but from the MyLab you cannot ping the PC. In this case you must disable or configure the firewall in the server's PC.

Collecting the log files

In case of DICOM problems, please collect the DICOM log files:

- Insert a USB pen drive
- Select "EXPORT LOG FILES TO USB" from the menu

When sending the log files, please describe carefully the situation, the errors from the OPERATIONS panel, etc.

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Chapter

2 - Antivirus Protection on MyLab Systems

As every other computer system, **MyLab** units can be exposed to malware attacks. A malware is a piece of software (sometimes called virus, trojan horse, worm, etc.) designed to infiltrate or damage a computer system without the owner's informed consent. In theory, the action of the malware could affect the operations of a computer system in many ways: it could delete its system files, stopping its working; but it could also compromise the security of the machine, allowing unwanted exposition of the data contained in it. In this way, in a medical imaging machine, this could compromise the privacy of the examined patients or damage the exam database.

Esaote develops its products, including the **MyLab**, with the objective of providing our customers with enhanced security capabilities and is committed to cooperate with its customers in their efforts to comply with security and privacy laws and regulations (HIPAA in the U.S.A., the EU Security Directive in Europe ...).

Unfortunately, as for any other computer system, internal security measures can not assure that the **MyLab** is completely secured against malware. For this reason the service technician has to be aware of these internal measures and has to know the better approach to operate the **MyLab** regarding the security aspects.

Malware Infection

Malware can enter into a computer system when executing a program that has a viral payload. This program execution can be either intentional or accidental. The MyLab system it is not normally allowed to intentionally execute any other software programs than the pre-loaded ones: the exceptions are when applying a software upgrade coming from Esaote or when installing a printer.

Esaote manufacturing plants and R&D departments have a strict company-wide anti-virus policy: every computer is continuously updated with the Operating System patches, runs continuously updated anti-virus software and the internal network is protected by firewalls. All the software coming from Esaote is released on write-only DVD-R, burned on systems carefully protected against viruses. In installing the printer, the **MyLab** system could ask for specific printers drivers, when they are not already present. As general rule and as always specified in printing installation instructions, only the "Additional drivers for MyLab" CD burned using a PC with installed an antivirus updated to the latest version must be used.

Besides these operations, the **MyLab** can be considered a closed system. To assure that the Operating System settings has been modified to disable booting from a removable device.

Note

Any operation different from the ones described in the Operator manual and in the Service manual is not authorized by Esaote. Any system misfunctioning caused by unauthorized operations is considered as falling under the user's or the technician's responsibility.

Operating System Patches Policy

Malware can also enter a computer system through the data network, exploiting a failure of the Operating System. For this reason, it is very important to install the relevant security patches released from the Operating System manufacturer as soon as possible.

Esaote decides to include the Operating System patches in the **MyLab** software releases: this will ensure that the patches do not affect the system and are validated by the Esaote.

At least every six-eight months, Esaote will issue a new software release, including all the relevant patches that were released by Microsoft.

Antivirus

Esaote excludes the installation of anti-virus program because it could affect the regular operations of the system: to be really effective, an antivirus software should be configured in a way to put a heavy burden on the system resources, especially regarding the real-time ultrasound acquisition. Moreover any antivirus software is effective only if updated very often (almost every day). Any update should be carefully validated in Esaote, to be sure it does not affect the regular operations of the machine.

Firewall

Besides that, it is advisable to close any possible way the malware can enter the system from the data network: for this reason all the unused network ports are closed in the MyLab.

To minimize the exposition to the threats coming from the network, medical devices based on a networked computer system, like the **MyLab**, should be only connected to a carefully managed data network, that is to a network that is carefully isolated from the external networks using suitable firewalls and that is not used to connect suspicious devices (such as laptops coming from outside the department, etc.). See for example, the USA Department of Veterans Affairs Medical Device Isolation Architecture Guide, April 30, 2004, available at the HIMSS website:

```
http://www.himss.org/ASP/topics_FocusDynamic.asp?faid=101.
```

Esaote suggests, for a complete protection of the **MyLab** from any network attacks, to use a complete agent-less intrusion-prevention system: this is a system that acts like a firewall protecting the network from outside, but also checks the internal network traffic against malware, without needing to install any piece of software in the **MyLab** system (see for example Trend Micro Network VirusWall Enforcer or Firebox X Core Unified Threat Management products or SonicWALL TZ products, or similar).

Note

It is suggested to contact the network administrator to know the network policy and to share this document

Enabling the internal firewall

In case the data network cannot be correctly isolated from external threats, there is still a possible solution to suggest to the customers. It consists of enabling the Windows XP internal firewall, configuring it to close all the incoming network ports. This solution is **less secure** than using a protected data network with external firewalls and has a few drawbacks: **it will not be possible anymore to send data to a Network Directory and it will not be possible anymore to use the DICOM Storage Commitment**.

Note

The internal firewall is incompatible with Virtual Navigator. If the internal firewall is enabled Virtual Navigator won't work.

If these drawbacks are acceptable, the procedure to enable the internal firewall is the following:

- 1. Turn the system on with the service key inserted.
- 2. Select "Settings" and "Control Panel".
- 3. Select "Windows Firewall".
- 4. The system may require to start the Windows Firewall/Internet Connection Sharing (ICS) service. Select "Yes" and press ENTER.
- 5. In the Windows Firewall menu "General" tab, enable both the "On (recommended)" and "Don't allow exception" fields.
- 6. Confirm the selection by pressing OK and turn the system off.
- 7. Remove the service key.

Chapter 3

3 - DICOM Troubleshooting

This chapter gives some indications to locate the more common problems and failures occurred in DICOM connection.

Failure of DICOM Test Connection

The DICOM test connection fails showing the message "Network Layer Error".

Suggestions

The below flow chart indicates the possible solutions.



Failure of DICOM Test Connection

The DICOM test connection fails showing the message "Association Rejected".

Suggestions

- 1. Check the DICOM settings (AE Title) both in the system and in the server. Note that the AE Title is case sensitive.
- 2. If the problem persists, collect the log and System Configurations files and get in touch with the central Service.

No Server Connection even if the Test Connection is OK

The test connection is OK but a connection error occurs with every DICOM operation.

Suggestions

- Check the DICOM settings (AE Title) both in the system and in the server. Note that the AE Title is case sensitive and that the DICOM server could not have checked this parameter during the test connection.
- 2. If the problem persists, collect the log and System Configurations files and get in touch with the central Service.

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Appendix A - Technical Notes

This section includes all the Technical Notes released for MyLab.

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Technical note N° 93

<u>Object:</u> Hardware modifications on MyLab 70 and MyLab Gold Platform

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Issued January 2006

1.0 GENERAL

This T.N. explains about two HW modifications on MyLab boards, in order to improve the quality of the unit.

The first one is on the PVA board code 9501110000, the second one is for the DCP code 9501094000. It's necessary to perform all the operations indicated with system off and main supply cable disconnected.

2.0 HARDWARE MODIFICATIONS ON PVA

2.1 Premise

The modification on the PVA board (code 9501110000) has been introduced in order to avoid noise on the speakers, when the unit is in VTR modality with a device connected. This modification increases the index of configuration of the board (IC) from 0 (zero) to 1 (one). So after the modification it's necessary to modify the label on the board crossing the number one.

2.2 How to proceed

The PVA board is inserted inside the PC group. In the following drawing is indicated its position:



To access to the board, it's necessary to remove the left plastic and metallic panels and the left bumper (see the service manual for more detailed instructions).

Disconnect all the cables on the PVA, unscrew the screw which fixes it to the PC metallic frame and remove the board from the PC motherboard.



Remove the two resistors R48 and R50 (they are indicated in the next drawing), positioned around U9 and C28.



Modify the label of the IC, crossing the number one.

Insert again the board inside the PC group and connect all the cables.

Fix it with the screw.

Close all the panels and check the unit.

3.0 HARDWARE MODIFICATIONS ON DCP

3.1 Premise

The modification on the DCP board (code 9501094000) has been introduced in order to avoid a possible noise in the audio modality.

This modification increases the index of configuration of the board (IC) from 0 (zero) to 1 (one). So after the modification it's necessary to modify the label on the board crossing the number one.

Perform this modification ONLY in case of audio problems on the unit.

3.2 How to proceed

To access to the board, it's necessary to remove the right plastic and metallic panels and the right bumper (see the service manual for more detailed instructions). Remove the board from the slot.

Remove the resistor R18 and replace it with a resistor 10? (resistor Thick film 62mW 1% SMD 0603, 200ppm 50V).

In the drawing below there is the position of the resistor.

After the modification, modify the label of the IC, crossing the number one. Then insert again the board inside the unit. Close all the panels and check.



4.0 TRACEABILITY

All the MyLab 70 starting s/n 90 have the PVA already modified

No MyLab 70 has been produced with DCP modified

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Object: Hardware modifications on MyLab70 systems

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Issued April 2006





1.0 GENERAL

This T.N. explains the following novelties introduced on MyLab70 system:

- MyLab70 Release 1.20 and 1.21
- Switches in the backside of MyLab70
- Hardware modification on PVA board.
- Hardware modification on power supply plug
- Traceability

2.0 MYLAB70 RELEASE 1.20 and 1.21

2.1 Releases

Code	Release
8610293002	1.20
8610293003	1.21

2.2 Novelties

Here below, the new features included in the Software Release 1.20 are listed:

- 1. Adult Cephalic application on PA230E: the adult cephalic application is now available with PA230E probe (it is included in the Vascular license)
- 2. CnTI Basic functionality: a preliminary version of CnTI is available for abdominal examination with CA431 and CA430E probes.
- 3. Measure & Analysis improvements
- 4. Doppler new features: triplex/duplex, reverse and orientation are now available
- Biopsy guideline: the biopsy guideline ABS421 (cod. 9102159000 for CA421, CA430E and CA431), ABS621 (cod. 9102158000 for CA621) and ABS523 (cod. 9102157000 for LA522E, LA523E and LA 523) are now available.
- 6. Multi language
- 7. Print improvements: it is now possible to send images to print layout while storing (IMAGE key), print preview is quickly accessible by clicking on the layout icon
- 8. Exam management and archive improvements
- 9. Image quality improvements

Software Release 1.21 is a patch released to fix some bugs found with the version 1.20 and to improve a few crucial features.

Improvements:

- Flow Velocity Index (FVI) measure
- X-View processing frame-rate
- The size of printed image with windows printer is now larger
- Image quality of CA430E

Solved bugs:

- System error messages mainly operating with linear probes
- Hang up of the system with the following sequence: B+CFM → PW Update → Plex → Zoom → B-REF → PW
- Control of available media for Export at End exam is now correct
- During "Archiving of DICOM exam list" only the first exam were saved on CD/USB/DICOM server
- Random system error at shutdown of the system

Software Pack for MyLab70 Rel. 1.21 is available to upgrade MyLab70 units running any software version. To speed-up distribution of Software Pack, it can be downloaded via internet from <u>ftp2.etosea.com</u> site (user: lcommon, password BloodyMary) or requesting the code 8610293003.

2.3 Software Update

Follow this procedure when you need to update a Software Release already installed on the system (i.e. 1.00, 1.10 or 1.20)

It is possible in some cases that performing the upgrade the archive is deleted. For this reason before launching the setup it is necessary to backup the archive. Move or copy the folder Archive under C:\BiolabWork in C:\Temp\Archivebackup (create this sub-folder). After setup move the saved directory from C:\Temp\Archivebackup in the previous position (C:\BiolabWork\Archive).

1. At the startup press the key to enter in the BIOS and check if the option Hyper-Threading Technology in the menu Advanced BIOS Features is present and disabled. In case disable it. Save the bios and reboot the system with the service key inserted. In case is not present skip this point. 2. Open Control Panel → Display → Settings → Advanced → Adapter → Properties
→ Driver and check the information about the driver ATI Catalyst 5.8 for the video board ATI RADEON 9600 SE. If they are:

- Driver Date: 8/3/2005

- Driver Version: 8.162.0.0

the system doesn't require any update, otherwise follow the procedure described in the paragraph "Updating drivers for ATI RADEON 9600 SE Video Board".

- Check the monitor resolution and frequency. Open Control Panel → Display → Settings. Screen resolution must be 1024 x 768 and Color quality 32 bit. Press Advanced → Adapter, Screen refresh rate must be 60 Hz
- 4. Open Control Panel → System → Hardware → Device Manager click on "Sound, video and game controllers" and check if Hauppage WinTV 878/9 WDM Video Driver is present. If not uninstall the old driver launching hcwclear.exe in the folder Service\Drivers\Grabber\Hauppage WinTv and choosing the complete uninstallation; at the end reboot the system. When the system restarts ignore all the requests to install drivers that will appears and launch wdm346_23061.exe in the folder Service\Drivers\Grabber\Hauppage WinTv. Reboot the system and when the system restart accept the automatic installation of the detected Hauppage peripherals.

<u>Note: if you are updating from AN OFFICIAL Sw Release or you do not want to save</u> the archive go to the next step, otherwise follow the manual procedure.

5. Run setup.bat in the root of installation disk.

In case of errors launching the automatic setup of the system sw try the MANUAL PROCEDURE (points below).

Master Setup will start checking the integrity of the files in the installation disk. It take few minutes. At the end the system automatically reboot. The uninstallation of the old software and the installation of the new one start. When SVG Software require the installation, click YES and accept the Software License Agreement; close the window of internet explorer when requested. The installation continues: confirm all the default options and when appear the "Hardware Installation" windows related to the "Cygnal USB composite" and CP2101 USB to UART Bridge Controller" click on "Continue anyway". At the end of the installation the system automatically reboots. When the system reboots double click on the start

icon to run the software, the FW is updated and at the end the MyLab Software starts. Remove the USB key and reboot.

MANUAL PROCEDURE (only in case the automatic setup will fail):

1. Backup the archive

From EV0956 to EV1047: Move the folder C:\Biolab\Archive in C:\Temp\ From EV1080: start MyLab SW and Backup the archive in the C:\Temp\BackupBiolab folder (create it if not exist) using the BACKUP ARCHIVE command that appears clicking UNDO on the Hard Disk icon in Archive Review. Select all the exams and choose the destination folder by clicking the DESTINATION key and click OK to confirm. Run the backup clicking START and wait till it is finished, then click CLOSE to go back to Archive Review.

- 2. Reboot the unit with the service key inserted.
- 3. Install the SW Biolab by running Install6100.exe contained in the folder Biolab_tools\Biolab. Wait till the installation DOS window is closed.
- 4. If you like to remove any enabled trace, delete the folder C:\DbgTrace
- 5. Uninstall the Echos SW. Open Control Panel → Add or remove Programs and require the Setup Echos uninstallation.
- 6. Open Control Panel → Add or remove Programs and check if Adobe SVG Viewer 6.0 is present. If not install it running SVGViewLast6.0 in the folder Biolab_tools\SVG. At the end double click on BARGRAPH_1.svg in the same folder and accept the license agreement
- 7. Delete the old Usdata folder and copy the new one contained in the installation disk.
- 8. Install the new Echos SW running SetupEchos.msi present in the folder Echosbin. Confirm all the default options and when appear the "Hardware Installation" windows related to the "Cygnal USB composite" and CP2101 USB to UART Bridge Controller" click on "Continue anyway". Wait the end of the installation and reboot the system with the service key inserted.

- 9. Open Control Panel → System → Hardware → Device Manager select Sound, video and game controllers → Video codecs double click, select the Properties tab and check if Microsoft MPEG-4 Video Codec is present. If not install it running wmpcdcs8.exe in the folder Biolab_tools\Codec. Click YES to accept the installation and to accept the License Agreement, then click Next to all the requests. Wait for the end of installation and reboot the system if required.
- 10. Restore the archive

From EV0956 to EV1047: Move the folder C:\Temp\Archive in C:\BiolabWork\ From EV1080: start MyLab SW and Restore the archive from the C:\Temp\BackupBiolab folder using the RESTORE ARCHIVE command that appears clicking UNDO on the Hard Disk icon in Archive Review. Click the SOURCE key, select the source folder and click OK to confirm. Run the restore clicking START and wait till it is finished, then click CLOSE to go back to Archive Review

It is possible, in case of the upgrade of the firmware for the PVA and/or PLC, that the system will turn automatically off. In this case will be sufficient to restart the unit by the ON/OFF switch.

2.5 Updating driver for ATI RADEON 9600 SE Video Board

Uninstall the old drivers running cat-uninstaller.exe in the folder Service\Drivers\VGA\RADEON9600_V5_8. Continue till the request of removing, choose Remove, then click Next and REMOVE. Wait for the end of uninstallation and reboot the system.

Install the new driver. During this phase the graphic resolution is very low, do not mind it. Run 5-8_xp-2k_dd_ccc_wdm_enu_25203.exe in the folder Service\Drivers\VGA\RADEON9600_V5_8. If "Security Warning" appears click RUN. Accept the default installation folder, accept the License Agreement and choose Express. Reboot the system and when "ATI Registration Choice" window appears choose Never remind me and click OK.
2.6 Warning upgrading to release 1.21

The upgrading to release 1.21 improves the features of XView processing in term of frame rate. This improvements fully exploits the potentiality of the DEP board.

On first MyLab70 units it may happens that the DEP board does not support this full functionality. In case of system crash after installing the 1.21 release, it is necessary to follow this procedure:

- Start the system with the service key inserted
- Open the folder C:\UsData\Board\Firmware
- Rename the new FW file dep0100_2002 as _dep0100_2110 (add the _ in first position)
- Rename the old FW file _dep0100_1453 as dep0100_1453 (delete the _ in first position)
- Restart the system

In such a way the unit will start correctly, but XView will have frame-rate limitations (as with release 1.10)

3.0 SERVICE PROCEDURE IN CASE OF PROBLEMS DURING THE SETUP OF THE MYLAB SOFTWARE RELEASE

In the backside of the MyLab70 units there are four switches: 2 on the PVA board (S1) and 2 on the PLC board (S2).



Each switch is ON in the UPPER POSITION, off vice versa.

In normal conditions the switches of the PVA and PLC must always be placed on the ON position.

The switches of the PLC enable different releases of the internal firmware:

Switch position	Firmware
Both ON	Last update
Both OFF	Factory version
One ON and one OFF	Not allowed

So, if the switches are to ON the board load the last firmware version, otherwise to OFF position the board work with the factory firmware version (oldest release).

If during an upgrade, the software crash there is the risk that the firmware written in the

PLC is not able to drive the board and the system is not able to complete correctly the upgrade.

Switching off the two switches the machine starts with the old firmware (factory default) and it is possible to repeat the setup from the beginning. In case the upgrade will finish correctly it is necessary to switch off the machine and place again the two switches of the PLC in the on position. If the problem was only due to one bad upgrade the system has to start correctly.

4.0 PVA BOARD

4.1 Premise

The modification on the PVA board (code 9501110000) has been introduced in order to avoid noise on the audio Doppler.

This modification increases the index of configuration of the board (IC) from 1 (one) to 2 (two). So after the modification it's necessary to modify the label on the board crossing the number two.

The modification cannot be done in the field.

4.2 How to proceed on PVA

The PVA board is inserted inside the PC group. In the following drawing is indicated its position:



To access to the board, it's necessary to remove the left plastic and metallic panels and the left bumper (see the service manual for more detailed instructions).

Disconnect all the cables on the PVA, unscrew the screw which fixes it to the PC metallic frame and remove the board from the PC motherboard.



The components involved in the modification are P6 and U10 as indicated in the next drawing.



Interrupt and lift the pins 2 and 3 of P6 (see next image).



Lift the pins 3 and 5 of U10 (see next image).



Connect one side of the resistors R12 (47.5 KO) directly to the pins 2 and 3 of P6 with a thread (see next images); connect one side of R13 (47.5 KO) to the free side of R12. Connect this join to the pins 3 and 5 of U10. Connect the free side of R13 to ground soldering it to the positive pin of the capacitor C30.



Modify the label of the IC, crossing the number two.

4.3 How to proceed on audio cable

The modification require to interrupt the ground connection of the Doppler Audio cable (8830938000) to the motherboard side.

To interrupt the ground connection (2 central pins) cut the cable as showed in the next images.









5.0 POWER SUPPLY PLUG

5.1 Premise

The modification on the unit main plug (code 2400000678) has been introduced in order to protect it from the bumps and from the solicitations coming from the power supply cable and to avoid the detachment of the power connector.

The part is positioned in the lower backside of the unit (see next picture).



5.2 How to proceed

Unscrew the two screws (indicated as 131) fixing the black power supply connector 2400000678.



Cover the black power supply connector with the 8108760000 metallic protection. Fix the cover using the new screws M3X10



6.0 TRACEABILITY

6.1 MYLAB70 SOFTWARE VERSION 1.21

Starting from the MyLab70 S/N 176 and MyLab70 X-View S/N 3022 the modification has been introduced.

TN 96



GENOA Ultrasound

Technical note N° 96

Object: MyLab70 Release 1.22

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Issued May 2006

1.0 GENERAL

This T.N. explains the following novelties introduced on MyLab70 system:

- MyLab70 Release 1.22
- LCD Monitor on MyLab 70 X-Vision
- Traceability

2.0 MYLAB70 RELEASE 1.22

2.1 Release

Code	Release
8610293004	1.22

2.2 Novelties

Software Release 1.22 is a patch released to fix some bugs and to improve a few crucial features.

Improvements:

- Optimization on PC printers: 2x2 layout is now set to landscape; a dedicated CD-ROM (code 8610292000) containing drivers of the printers supported by MyLab70 is now available to facilitate PC printers installation.
- CA430E convex probe image quality has been improved.
- Improvements for 5MHz CW Doppler pencil probe.
- Additional backup of the configuration files in order to avoid problems of missing licences.

• Export of error file without service key (only in case of system crash).

A new dialog appears on the screen in case of system crash. Error files can be exported to an USB memory stick by pressing the relevant button. This operation can be performed also by the user since does not require Service key.

Diagnostic	Export Error File	X
The Process GwLexe has died System Error	Default Folder E:\EsaTmp0\	[Change Folder]
Exit Export Error File	Export	Cancel

Solved bugs:

• An incorrect bios setup of the "Hyper-Threading Technology" option (Esaote default is "disabled") could generate system error. It may happen when loading the bios the power is suddenly down. In this case in the next boot the following message will appear:

```
Overclocking failed! Please enter setup to re-configure
your system.
Press F1 to run SETUP
Press F2 to load default values and continue
```

In this case it is necessary press F1 (password laser) and perform a check of the appropriate bios setting (Hyper-Threading: disable).

In case of PC Motherboard FOXCONN (code 9102586000) select "Advanced bios features \rightarrow Hyper-threading technology".

In case of PC Motherboard ASUS (code 9102572000/100) select "Advanced \rightarrow CPU configuration \rightarrow Hyper-threading technology".

In any case a check is now performed at system startup. In case "Hyper-Threading" is found enabled, an error message instruct to modify this setting. When this error message appears will be necessary to reboot the system and set the "Hyper-Threading" in the correct way.

Diagnostic	
The system has detected Configuration. Please re and DISABLE the Hyper Technology as explained Software Procedure". System Error	an invalid Bios boot the system - Threading I in "Installation
Exit	Export Error File

- License: the memorization of system licences is now more robust to avoid loosing of this data.
- CnTI: user preset saved while CnTI works now correctly.

Software Pack for MyLab70 Rel. 1.22 is available to upgrade MyLab70 units running any software version. To speed-up distribution of Software Pack, it can be downloaded via internet from <u>ftp2.etosea.com</u> site (user: lcommon, password BloodyMary) or requesting the code 8610293004.

Warning: following the wrong use of the ON/OFF key on the keyboard it happened in some cases that the unit lost the licences and the operating system was corrupted. The right way to turn off the machine is to press the key and immediately release it. In case the key is hold for more than 2/3 seconds the system is forced to shut down immediately without closing all the programs in the right way. This condition may create the problems mentioned.

2.3 Software Update

Follow this procedure when you need to update a Software Release already installed on the system (i.e. 1.00, 1.10, 1.20 or 1.21)

1. At the startup press the key to enter in the BIOS and check if the option Hyper-Threading Technology in the menu Advanced BIOS Features is present and disabled. In case disable it. Save the bios and reboot the system with the service key inserted. In case is not present skip this point.

2. Open Control Panel → Display → Settings → Advanced → Adapter → Properties
→ Driver and check the information about the driver ATI Catalyst 5.8 for the video board ATI RADEON 9600 SE. If they are:

- Driver Date: 8/3/2005

- Driver Version: 8.162.0.0

the system doesn't require any update, otherwise follow the procedure described in the paragraph "Updating drivers for ATI RADEON 9600 SE Video Board".

- Check the monitor resolution and frequency. Open Control Panel → Display → Settings. Screen resolution must be 1024 x 768 and Color quality 32 bit. Press Advanced → Adapter, Screen refresh rate must be 60 Hz
- 4. Open Control Panel → System → Hardware → Device Manager click on "Sound, video and game controllers" and check if Hauppage WinTV 878/9 WDM Video Driver is present. If not uninstall the old driver launching hcwclear.exe in the folder Service\Drivers\Grabber\Hauppage WinTv and choosing the complete uninstallation; at the end reboot the system. When the system restarts ignore all the requests to install drivers that will appears and launch wdm346_23061.exe in the folder Service\Drivers\Grabber\Hauppage WinTv. Reboot the system and when the system restart accept the automatic installation of the detected Hauppage peripherals.

<u>Note: if you are updating from AN OFFICIAL Sw Release or you do not want to save</u> <u>the archive go to the next step, otherwise follow the manual procedure.</u>

5. Run setup.bat in the root of installation disk.

In case of errors launching the automatic setup of the system sw try the MANUAL PROCEDURE (points below).

Master Setup will start checking the integrity of the files in the installation disk. It take few minutes. At the end the system automatically reboot. The uninstallation of the old software and the installation of the new one start. When SVG Software require the installation, click YES and accept the Software License Agreement; close the window of internet explorer when requested. The installation continues: confirm all the default options and when appear the "Hardware Installation" windows related to the "Cygnal USB composite" and CP2101 USB to UART Bridge Controller" click on "Continue anyway". At the end of the installation the system automatically reboots. When the system reboots double click on the start

icon to run the software, the FW is updated and at the end the MyLab Software starts. Remove the USB key and reboot.

MANUAL PROCEDURE (only in case the automatic setup will fail or updating from a lab version):

1. Backup the archive

From EV0956 to EV1047: Move the folder C:\Biolab\Archive in C:\Temp\

MyLab SW and Backup archive From EV1080: start the in the C:\Temp\BackupBiolab folder (create it if not exist) using the BACKUP ARCHIVE command that appears clicking UNDO on the Hard Disk icon in Archive Review. Select all the exams and choose the destination folder by clicking the DESTINATION key and click OK to confirm. Run the backup clicking START and wait till it is finished, then click CLOSE to go back to Archive Review.

- 2. Reboot the unit with the service key inserted.
- 3. Install the SW Biolab by running Install6100.exe contained in the folder Biolab_tools\Biolab. Wait till the installation DOS window is closed.
- 4. If you like to remove any enabled trace, delete the folder C:\DbgTrace
- 5. Uninstall the Echos SW. Open Control Panel → Add or remove Programs and require the Setup Echos uninstallation.
- 6. Open Control Panel → Add or remove Programs and check if Adobe SVG Viewer 6.0 is present. If not install it running SVGViewLast6.0 in the folder Biolab_tools\SVG. At the end double click on BARGRAPH_1.svg in the same folder and accept the license agreement
- 7. Delete the old Usdata folder and copy the new one contained in the installation disk.
- 8. Install the new Echos SW running SetupEchos.msi present in the folder Echosbin. Confirm all the default options and when appear the "Hardware Installation" windows related to the "Cygnal USB composite" and CP2101 USB to UART Bridge Controller" click on "Continue anyway". Wait the end of the installation and reboot the system with the service key inserted.

- 9. Open Control Panel → System → Hardware → Device Manager select Sound, video and game controllers → Video codecs double click, select the Properties tab and check if Microsoft MPEG-4 Video Codec is present. If not install it running wmpcdcs8.exe in the folder Biolab_tools\Codec. Click YES to accept the installation and to accept the License Agreement, then click Next to all the requests. Wait for the end of installation and reboot the system if required.
- 10. Restore the archive

From EV0956 to EV1047: Move the folder C:\Temp\Archive in C:\BiolabWork\ From EV1080: start MyLab SW and Restore the archive from the C:\Temp\BackupBiolab folder using the RESTORE ARCHIVE command that appears clicking UNDO on the Hard Disk icon in Archive Review. Click the SOURCE key, select the source folder and click OK to confirm. Run the restore clicking START and wait till it is finished, then click CLOSE to go back to Archive Review

It is possible, in case of the upgrade of the firmware for the PVA and/or PLC, that the system will turn automatically off. In this case will be sufficient to restart the unit by the ON/OFF switch.

2.5 Updating driver for ATI RADEON 9600 SE Video Board

Uninstall the old drivers running cat-uninstaller.exe in the folder Service\Drivers\VGA\RADEON9600_V5_8. Continue till the request of removing, choose Remove, then click Next and REMOVE. Wait for the end of uninstallation and reboot the system.

Install the new driver. During this phase the graphic resolution is very low, do not mind it. Run 5-8_xp-2k_dd_ccc_wdm_enu_25203.exe in the folder Service\Drivers\VGA\RADEON9600_V5_8. If "Security Warning" appears click RUN. Accept the default installation folder, accept the License Agreement and choose Express. Reboot the system and when "ATI Registration Choice" window appears choose Never remind me and click OK.

2.6 Warning upgrading to release 1.22

The upgrading to release 1.22 improves the features of XView processing in term of frame rate. This improvements fully exploits the potentiality of the DEP board.

On first MyLab70 units it may happens that the DEP board does not support this full functionality. In case of system crash after installing the 1.22 release, it is necessary to follow this procedure:

- Start the system with the service key inserted
- Open the folder C:\UsData\Board\Firmware
- Rename the new FW file dep0100_2110 as _dep0100_2110 (add the _ in first position)
- Rename the old FW file _dep0100_1453 as dep0100_1453 (delete the _ in first position)
- Restart the system

In such a way the unit will start correctly, but XView will have frame-rate limitations (as with release 1.10)

3.0 LCD MONITOR ON MYLAB70 X-VISION

MyLab70 X-Vision is equipped with an LCD monitor 19' (cod. 9103019000) or 21' (cod. 9103021000).

To install the monitor proceed in the following way:

- Place the LCD monitor on to the metallic basement of MyLab (refer to the next figure). Keep attention that the monitor is correctly positioned, with the holes in the monitor's basement that match the holes on the system metallic basement and that the cables leave the machine as shown in the next image.

- Fix the monitor to the metallic basement of the unit with the four screws (M5x10).



- Cover the monitor basement fixing the front cover and the back cover by the fixing screw.





- Connect the power supply and the video cables.

- Cover the monitor basement fixing the basement cover by the two fixing screws (M4x10).



To remove the monitor procede vice versa.

4.0 TRACEABILITY

4.1 HARDWARE MODIFICATIONS ON DCP (see TN 93)

Starting from the MyLab70 S/N 90 the modification has been introduced.

4.2 MYLAB70 SOFTWARE VERSION 1.22

The first s/n modified will be communicated in the next T.N.



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1.0 MYLAB70 RELEASE 2.02

1.1 Release

Code	Content
8610293009	MyLab70 Release 2.02 Software Pack
8620078003	Virtual Navigator Installation Disk

Software Pack for MyLab70 Rel. 2.02 is available to upgrade MyLab70 units running any software version. Virtual Navigator Installation Disk is available to install/upgrade Virtual Navigator on MyLab70 units running Rel. 2.02 software version.

To speed-up distribution both codes can be downloaded via internet from <u>ftp.esaote.com</u> site (user: lcommon, password BloodyMary).

Note

Be sure to burn a CD/DVD with the software release using a PC with installed an antivirus updated to the latest version.

<u>1.2</u> Novelties

Here below, the new features included in the Software Release 2.02 are listed:

- 1. Cardiac application for GP market: the cardiac licence (cod. 8610273000) includes:
 - adult and pediatric cardiology with PA230E, PA122E, 2CW probes;
 - operative modes B, TEI, M, M-CFM, CFM, PW and CW;
 - TVM (Tissue Velocity Mapping) and TV (Tissue Velocity);
 - ECG trace;

- Cardiac calculation package.

Note: When ECG is active, digital clip acquisition is triggered with R-R wave, but clip can be saved only when system is frozen. In other words, with this software version is not jet possible to store clips and images with ECG sync in real-time.

2. New CA631 probe: the CA631 (cod. 9600185000) is a new convex probe with 60 degrees of radius and 8-1 MHz of frequency range.





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- 3. IOE323 (cod. 9600160000) intraoperative probe.
- 4. 3D and 4D imaging: 4D-3D licence (cod. 8610273016) includes Free Hand 3D imaging with conventional linear and convex probes and 4D imaging with BC431E bi-scan convex probe (cod. 9600179000).
- 5. SAVE/LOAD PRESET: unit presets can be saved/loaded in/from a USB flash memory for backup purposes or to copy configuration from unit to unit.

To **Save preset** insert an USB memory with free space available and press Menu \rightarrow Save/load preset \rightarrow Save preset

To Load preset insert insert an USB memory containing preset and press Menu \rightarrow Save/load preset \rightarrow Load preset, the following dialog will appears on the screen



By checking/unchecking displayed items, only desired preset will be loaded on the unit.

Factory preset: Factory default preset can be now overwritten. When a factory preset is overwritten, the latter will be displayed in the list of custom preset. To restore default just select Carotid preset and click "Delete preset".

- 6. Application preset: a new item called "application preset" is available in the MENU. This item will include all those options to be set by application. The first one available is Absolute Angle. When this option is flagged Doppler angle θ stays in line with vessel when changing steering. This option is available on linear probes only.
- 7. Post processing: editable post processing curves are now available.
- 8. ADM: Automatic Doppler Measurements can be enabled by pressing the ADM soft key when system is in Doppler mode.



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- 9. Master gain range in in B-mode has been widen in order to reach the following conditions with all probes:
 - image saturation at maximum gain
 - almost no image at minimum gain
- 10. TGC can be now used in two ways: absolute or relative.

- In absolute mode sliders action is always distributed to the maximum depth of the probe. Non active TGC, depending on current depth, are not lighted.

- In relative mode all the sliders are distributes to the current depth. Every time depth is changed, TGC are redistributed. All TGC are always lighted.

Press <Adjust> to switch from the two modes.

- 11. Triplex improvements: Spectral Doppler quality in triplex mode has been definitely improved (no more machine gun effect). When switching to triplex from TEI imaging, the latter is preserved in B+CFM+PW live.
- 12. Doppler and M-mode Format: the ratio between B-mode and Doppler or M-mode can be chosen between four options: Small, Medium, Large and Dual.
- 13. End exam panel functions have been optimized. Archive, Export (BMP, AVI) and DICOM storage can be performed simultaneously.
- 14. Abdominal probes optimization: new settings introduce better results in term of image quality in the CA430, CA431 and CA621 probes.
- 15.LA532E for CnTI: LA532E linear probe introduces the possibility to perform contrast media examination in superficial structures.
- 16. Stand-off: a water stand-off (cod. 9650030000) is available to be fitted on top of linear probes.
- 17. New HP 1600 Color LaserJet Printer (cod. 9730100700) is now available. The drivers for this and other printers can be downloaded from ftp.esaote.com, user drvdownload, password DriverS (note the system is case sensitive), or from csa.etosea.com in the section "Printers for MyLab Family" of the service documentations for ultrasound.
- 18. IHE compliance: IHE stands for Integrating the Healthcare Enterprise. To fulfil this compliance, the Modality Worklist, MPPS and Storage Commitment DICOM SOP classes have been added and integrated with the DICOM Storage, to guarantee a seamless workflow from the scheduling of the exam until the storage of the produced images.



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- 19. User login management for privacy: the system can be set to require User name and Password to the operators. Refer to paragraph 2.0 USER LOGIN MANAGEMENT for further information.
- 20. MyLabDesk: a new software that can be installed on any windows PC for reviewing, reporting, printing and off line calculation. Refer to paragraph 3.0 MYLABDESK for further information.

<u>1.3</u> Acceptable limits for the release 2.02

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A strong effort has been made to reach an high level of robustness of software. A testing and debug activity has been carried out on the field, involving people of Esaote subsidiaries, but some minor problems are still open. A list follow:

- Possible vertical spikes in CFM with LA523 and CA123 probes when color box is narrow in height. When this happens enlarge the color box height or decrease the power.
- Incompatibility between some model of Imation DVD+RW and the DVD burner model installed some of the MyLab units.
- Archived clips (CLIP): the set clip duration is the maximum time of the acquisition, the real clip duration depends on the conditions (i.e. F/R, mode, probe, etc.).
- Editing obstetric table requires to use the point for the decimals, if comma is used, decimal part is not saved.
- The thumbnails related to 3D acquisition, 3D snapshot, 3D volume saving from 4D cine, 4D snapshot and 4D clip appear not well centered.
- On 4D stored images it is not possible to perform measures.
- DICOM export of exams containing a big number of clips can slow down the system.
- When a network directory has been configured, it is necessary to boot the PC where the directory is located before switching on MyLab70, otherwise the connection will not work.
- Only one network interface can be set in the IP ADDRESS CONFIGURATION panel. In case of more complicated network use the NETWORK CONFIGURATION (service key).
- After writing an annotation on a stored clip and exporting the clip on USB key in AVI, the annotation appears only in the frame where has been written.
- When disconnecting the active probe from the unit while transferring DICOM data set from Navigator, the unit becomes very slow till the end of the operation.
- When exporting in DICOM a clip containing only a single frame if RLE compression has been selected for images, an error message appears and the clip cannot be exported.



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- When importing a cardio exam with the fields height, weight and bsa void then in Patient ID bsa value is set to -1.
- If you copy an exam to USB or Network directory and then you modify some data in PATIENT ID, you will not be able to copy it over-writing the old instance of the same patient. To copy it, before delete the old copy from the destination archive.
- When using tab to advance in Patient ID fields, when reaching AGE field it is impossible to advance to another field unless clicking on it with the mouse pointer.
- Even if the Plex modes (Triplex and Duplex) are improved, still some minor "machine gun" effect may happen with CA631 particularly in presence of high reflective structure below the gate.



- If you press +---+ and without doing a measurement you press Start/End and choose a new examination, the soft keys are still in the measure mode. You cannot change any parameters with the soft keys during live scanning. Freeze/Unfreeze to update the soft keys.
- The TEI signal decrease when inserting CFM with the probe EC123.
- Possible system error in CFM with linear probes when color box is set to its maximum size and color gain is set to its maximum value. The problem doesn't occur in standard working conditions.
- When using the EC123 probe in CFM the sensitivity can be low. In this case it is suggested to use the Bi-directional Power Doppler. The problem will be solved with the next release.
- Setup failures with some USB devices. Remove all USB devices (except service key) before run setup. The problem is Windows depending.



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<u>1.4</u> Software Update

Follow this procedure when you need to update a Software Release already installed on the system.

Note: remove all USB devices (except service key) before booting the machine to install.

Note: in case of downgrade from a version to a previous one, it's possible that the archive of patient data will become unreadable, hanging the machine with a system error message (biolab.exe SW error). To solve the problem is necessary to delete or copy in a different folder all the patient data which are under c:\biolabwork\archive. The data will become accessible only returning back to the original release (or to a superior).

a) Backup the archive copying the folder C:\BiolabWork\Archive in the C:\Temp\BackupBiolab folder (create it if not exist, use an external drive if the available space is insufficient). If the archive is big, this operation can take a lot of time.

b) Run **setup.exe** in the installation disk, the installation starts doing the following operations:

- 1. Master Setup will start copying all the installation file in the local disk. It take few minutes. NOTE: This operation require 5 GB of free space.
- 2. The system requires if you want proceed with the installation: press "OK, Continue". Be sure to have a backup of the archive before to continue. From this moment you can remove the installation disk. Do not remove the USB key.
- 3. Master Setup will start checking the integrity of the files in the installation disk. It take few minutes.
- 4. If an older software version is found, the system automatically reboot.
- 5. The uninstallation of the old software and the installation of the new one starts.
- 6. When SVG Software require the installation, click YES and accept the Software License Agreement; close the window of internet explorer when requested. It is possible that in this phase of installation an "Information Bar" window message appears, if this happens click OK, then in the Internet Explorer window click on the yellow bar ("To help protect your security, Internet Explorer has restricted this file from showing active content that could access your computer. Click here for options...") this action opens a menu, choose "Allow Blocked Content..." then confirm with YES accept the Software License Agreement; close the window of



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internet explorer when requested.

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Please, accept "License Agreement", then close.	
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- 7. The installation continues: confirm all the default options and when appear the "Hardware Installation" windows related to the "Cygnal USB composite" and CP2101 USB to UART Bridge Controller" click on "Continue anyway".
- 8. The system reboot and starts the Security Update; it take about 20 minutes.
- 9. At the end of the installation the system automatically reboots.
- 10. When the system reboots double click on the start icon to run the software, the FW is updated and at the end the MyLab Software starts.
- 11. Remove the USB key and enter as echouser

At start of the software the update of the firmware will be done if required. It is possible, in case of the upgrade of the firmware for the PVA and/or PLC and/or BLC, that the system will turn automatically off. In this case will be sufficient to restart the unit by the ON/OFF switch.

c) If the archive has been correctly restored delete the C:\Temp\BackupBiolab folder. If the archive hasn't been restored, delete the C:\BiolabWork and C:\BiolabInst folders, repeat the setup (point b), then delete the folder C:\BiolabWork\Archive and copy the folder C:\Temp\BackupBiolab\Archive in C:\BiolabWork\. When the archive is working delete the folder C:\Temp\BackupBiolab\Archive.



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<u>1.5</u> Virtual Navigator Updating/Installing

Follow this procedure after the Software Release installation in order to update Virtual Navigator software.

- 1. Reboot MyLab with the service key inserted.
- 2. Do not start the software.
- 3. Open the folder VirtualNavigatorSWP- xxxx
- 4. Open the folder NaviSuite XX
- 5. Double click on Setup.exe
- 6. Select Remove
- 7. Press Next and after OK
- 8. Press Retry until the window disappear
- 9. Press Yes and wait for system reboot
- 10. Switch on the system
- 11. Open the folder VirtualNavigatorSWP- xxxx
- 12. Open the folder NaviSuite XX
- 13. Double click on Setup.exe
- 14. Press Next until calibration files are required
- 15. Select Browse
- 16. Select the folder CalibrationDisk in VirtualNavigatorSWP- xxxx\ NaviSuite XX\ CalibrationDisk
- 17. Press OK
- 18. Press OK
- 19. Reboot



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Follow this procedure after the Software Release installation in order to install Virtual Navigator software.

- 1. Reboot MyLab with the service key inserted.
- 2. Do not start the software.
- 3. Open the folder VirtualNavigatorSWP- xxxx
- 4. Open the folder NaviSuite XX
- 5. Double click on Setup.exe
- 6. Press Next until calibration files are required
- 7. Select Browse
- 8. Select the folder CalibrationDisk in VirtualNavigatorSWP- xxxx\ NaviSuite XX\ CalibrationDisk
- 9. Press OK
- 10. Press OK
- 11. Reboot



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2.0 **USER LOGIN MANAGEMENT**

The User Login Management is necessary to comply the more and more restricted laws about privacy.

The system access, particularly the access to the archive data, can be limited to authorized users. In this case all users have to enter a password to use the system and to access to the archive data. The access under password allows the security management of the archive: its data can be reviewed and modified only by authorized personnel.

2.1 Users Accounts

Two different accounts are available: administrator and user.

The system administrator can decide whether to activate the security or not. When enabled, he can add, modify and delete users and define their profiles. The administrator can set the emergency access to the system (access without password). More administrators can be defined

Note The default administrator user name and password are: ADMINISTRATOR and MYLAB. Change this account if the security management is activated.

Both administrator and users can access the archive, both in exam review and in archive review.

2.2 Security Access to the System

When security is enabled, a password is required to access the system. When starting up, the system requires to enter the user name and password.

USER NAME	
PASSWORD	
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When the Emergency option is active, exams can be performed (EMERGENCY button) without entering any user name and password. The Emergency access allows to perform





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exams and review saved images in Exam Review, but won't allow to access the Archive (ARCHIVE REV key).

Note Emergency exams are automatically saved on the local archive. Only authorized users can access these exams

The LOG OFF button is displayed besides the OK button in the Start Exam window. The system is set on stand-by by pressing this key and can be reactivated by inserting user name and password again.

2.3 Security Configuration

The "Security" option has two folders: "Configuration" and "Change Password". The last folder is displayed only when the security is enabled.

Only administrators can access the Configuration option. The configuration menu has two folders: "Settings" and "Users".

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INACTIVITY TIME DISABLING LOGIN (DAYS):	130	
PASSWORD MINIMUM LENGTH:	5	
PASSWORD EXPIRATION (DAYS):	90 📰	
DISABLE EMERGENCY ACCESS		
I DISABLE ACCESS CONTROL		
		*
IMPORT FROM USB	TO USB	

Settings Folder



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To be applied to: ✓ MyLab70

MyLab70 XVision

The following settings are available:

Field	Action
INACTIVITY TIME DISABLING	Sets the inactivity time (in days) after which
LOGIN (DAYS)	the account automatically expires.
PASSWORD MINIMUM LENGTH	Sets the minimum number of characters for
	the password (maximum 20).
PASSWORD EXPIRATION (DAYS)	Sets the time (in days) after which the
	password expires.
DISABLE EMERGENCY ACCESS	Disables the emergency access when
	checked.
DISABLE ACCESS CONTROL	Disables the security access when checked

Note The system is case sensitive.

In the Users Folder, User accounts can be added (ADD button), modified (EDIT button) or deleted (DELETE button).

A new user account is identified by "User name", "Last name", "First name" and "Middle name". The user can be set as administrator when the relevant box is checked.

The system requires a new password at the first log in if the "Change password at next login" is checked.

The user can access the system only when he is enabled.

The ASSIGN PASSWORD button (available with the EDIT button) allows to change the password for an existing user.

Saving the configuration

The settings can be saved on a USB support (EXPORT TO USB) or imported from a USB support (IMPORT FROM USB). All configurations (Settings and Users) are saved. Change Password

This option is available for all authorized users and allows to change the password. Old and new passwords have to be inserted.

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3.0 MYLABDESK

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MyLabDesk is a software that, once installed on a PC, reproduces the MyLab working environment: its working procedures are equivalent to what has been described for MyLab.

		• •	2
	@saote MyLabDesk	APR 19 2006 02:21:27pm 📻 🚍 📻 📻	
PRINT PRINT	LAST NAME:	ID: 🛛 🔜 🔜 🔜 🔜 🐨 🐷	1
	FIRST NAME:	BIRTH DATE: ///////DD/MM/YYYY) B-• PROVA ESAME	1
ALT+1 ALT+2	REFERRING PHYSICIAN:	DIAGNOSIS:	4
REPORT	PERFORMING PHYSICIAN:	EXAM DATE:	4
	APPLICATION: EXAM STATUS: OPERATOR:		2
ALT+H	ANY 🔽 ANY 🗹 ANY 🗹	TODAY VESTERDAY	4
POINTER	PATIENT ID E>	AM R C B DATE TIME	2
++	PROVA, ESAME CA	RDIAC APR 19 2006 09:27am	_
ALT+P ALT+G			4
			4
TOOLS MEASURE			2
ALTAN			4
ALT+T ALT+H			4
			4
(SETUP)			9
			4
AL1+S			4
			5
Patient ANNOT			4
			4
ALT+E ALT+A			-
			4
QUIT (MARK)		QUERY	4
			2
ALTHR ALTHB		RESET	
700M	ESTIMATED SIZE, CODVAL 37 MR. DICOM, 1 02 MR. EX	DODT 2 55 MP TOTAL TWACES 2	4
	ESTIMATED SIZE. COPT.1.57 MB, DICUM.1.08 MB, EX	TOTAL IMAGES.2	
ALT+Z	Shift+F3 Shift+F4 Shift	+F5 Shift+F6 Shift+F7 Shift+F8	
CLIP		STATUS OPERATOR SCROLL T	
	CODY PAGE ANY	ANY ANY SCROLL DOLL T	
ALT+C ALT+I	F1 F2 F3 F3 F4 F5	F6 F7 F8 F9 F9 F10	

MyLabDesk offers the possibility to perform the following basic functions:

- to review and work with native Esaote file formats (RAW DATA UAF and EAF)
- to perform cardiac and generic measurements
- to view and print the exam (report and images) created on MyLab ultrasound platform or completed on MyLabDesk station
- to export data on directories and from there, using the standard tools provided by the hosting PC, to burn a CD.

Note

Each time a MyLab70 software is upgraded, it is required to upgrade MyLabDesk as well, otherwise patients could not be opened with MyLabDesk.


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To be applied to: ✓ MyLab70

✓ MyLab70 XVision

3.1 MyLabDesk Installation

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MyLabDesk setup can be directly downloaded from a MyLab unit while doing a 'copy' operation. MyLabDesk is provided as a standard accessory of the Ultrasound equipment. It operates on PC equipped with Windows XP (Home and Professional) Operative System. The SW operates with video resolution starting at 1024x768. The software provides a user interface and a workflow very similar to the one of MyLab70.

MyLabDesk Set Up is organized in two folders: the "Archive" folder, containing copied exams, and the "SetUp Desk" folder with the installation files.

Note

MyLabDesk installation is reserved to users with an Administrator profile.

Insert the medium containing the set up in the PC, select the "SetUp Desk" folder out of the File Management utility, copy the folder into a local disk and run the setup.exe file. The installation is guided by a wizard: follow the given instructions to successfully complete the installation.

Once the installation is over, the desktop will include the MyLabDesk icon.

To copy the exam archive into the PC, follow the following procedure:

Run MyLabDesk by double clicking on its icon.

Select the icon of the source medium (CD/DVD, USB, Network) and press Enter.

The system lists all exams available in the medium: using the cursor select the exams to be locally imported.

Press the Copy key and select "Local Archive" Press OK to start.

MyLabDesk is available in the following languages: Italian, English, French, German and Spanish. The default language is English. To change the software language, follow this procedure:

Save MyLab the user presets ("Save Preset" option of menu key) on a USB pen drive. Run MyLabDesk by double clicking on its icon.

Press the SETUPMENU key.

Select the option "USB IMP", displayed on the bottom.

Once this procedure has been completed, guit and run MyLabDesk again to activate the new language version.

With the exception of the SetupMenu, e and Quit keys, MyLabDesk keys work as the corresponding MyLab commands: Annot activates the annotation menu, Image saves single frames etc.



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To be applied to: ✓ MyLab70

MyLab70 XVision

4.0 SETTING THE MONITOR

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4.1 Set the monitor preset on MyLab 70 and Gold Platform

Starting from release 2.02, iIn order to uniform the performances of the monitors used with MyLab70 (LCD 19", LCD 21" or CRT), different post processing maps have been created to each of them. It is important to set it up correctly at the end of the installation/update of the software.

To choose the correct monitor type for your unit a new item has been added to the service menu.

Open Menu \rightarrow Service \rightarrow Settings \rightarrow Monitor and select:

- XCRT when the monitor is the CRT LG 17'' (cod. 9102854000)
- XVISION when the monitor is the LCD EIZO 19" (cod. 9103019000)
- XVISION W when the monitor is the LCD EIZO 21" (cod. 9103021000)

All the adjustments have to be performed connecting the monitor to the unit where it will be used.

4.2 Set the LCD's 19" monitor appearance for MyLab 50

In order to display the system image at its native resolution (1024x768) it is necessary to set properly the LCD monitor following the next procedure:

- 1. Unlock the monitor menu.
- 2. In the monitor, press the Enter button once to display the main menu of the Screen Manager
- 3. Select the <Other> icon using the control buttons (left, down, up, right) and press the Enter button to confirm. The sub menu appears.
- 4. Select the <Screen Size> icon using the control buttons (left, down, up, right) and press the Enter button to confirm. The setting menu appears.
- 5. Select the <Normal> screen size using the control buttons (left, down, up, right) and press the Enter button to confirm.
- 6. Select the <Border Intensity> icon using the control buttons (left, down, up, right) and press the Enter button to confirm. The setting menu appears.
- 7. Press the left button to make darker the area surrounding the displayed image and

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press the Enter button to confirm.

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- 8. To return to the main menu, select the <Return> icon or press the Down button twice, followed by the Enter button.
- 9. Press the Auto button twice to automatically center the image, while on the screen is displayed one image 1024 x 768 without black surrounding
- 10. Select the voice <Screen> in the main menu and confirm with Enter.
- 11. Select the voice <Segnal Filter> and confirm with Enter.
- 12. Adjust the value of the intesity to 4 using the right arrow, then confirm with Enter
- 13. If the letters are not perfectly clear select the voice <Phase> and confirm with Enter.
- 14. Adjust the value of the phase using the left and right arrows, focusing the letters on the screen then confirm with Enter
- 15. To exit the Screen Manager, select <Return> and <Exit> icon or press the Down button twice, followed by the Enter button.
- 16. Lock the monitor menu.

4.3 Set the LCD's 19" monitor appearance for MyLab 70 and Gold Platform

By default the LCD monitors in use with MyLab70 automatically enlarge the lower resolutions to full screen (1280x1024) applying an interpolation.

In order to display the system image at its native resolution (1024x768) it is necessary to set properly the LCD monitor following the next procedure:

- 1. Unlock the monitor menu.
- 2. In the monitor, press the Enter button once to display the main menu of the Screen Manager
- 3. Select the <Other> icon using the control buttons (left, down, up, right) and press the Enter button to confirm. The sub menu appears.
- 4. Select the <Screen Size> icon using the control buttons (left, down, up, right) and press the Enter button to confirm. The setting menu appears.
- 5. Select the Normal screen size using the control buttons (left, down, up, right) and press the Enter button to confirm.
- 6. Select the <Border Intensity> icon using the control buttons (left, down, up, right) and press the Enter button to confirm. The setting menu appears.
- 7. Press the left button to make darker the area surrounding the displayed image and press the Enter button to confirm.





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- 8. To return to the main menu, select the <Return> icon or press the Down button twice, followed by the Enter button.
- 9. Press the Auto button twice to automatically center the image, while on the screen is displayed one image 1024 x 768 without black surrounding
- 10. Select the voice <Screen> in the main menu and confirm with Enter.
- 11. Select the voice <Phase> and confirm with Enter.
- 12. Adjust the value of the phase using the left and right arrows, focusing the letters on the screen then confirm with Enter
- 13. To exit the Screen Manager, select <Return> and <Exit> icon or press the Down button twice, followed by the Enter button.
- 14. Lock the monitor menu.

In order to lock and unlock the monitor menu follow this steps:

- 1. Switch off the monitor
- 2. Switch on the monitor by holding down the AUTO button

Menu	Function
Full	Displays the picture on the screen in full, irrespective of the picture's resolution. Since
	the vertical resolution and the horizontal resolution are enlarged at different rates, some
	image may appear distorted.
Enlarged	Displays the picture on the screen in full, irrespective of the picture's resolution. Since
	the vertical resolution and horizontal resolution are enlarged at the same rates, some
	horizontal or vertical image may disappear.
Normal	Displays the picture at the actual screen resolution.



Note

The image set to Normal size appears surrounded from a black frame. Although the image appears more little that the monitor its dimension is equivalent to a 17" monitor offering an image quality and dimensions that can be compared with the competitor's ones.

To enlarge again the resolution to full screen select Full at the point 4 of the previous procedure.





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4.4 Set the LCD's 21" monitor appearance for MyLab 70 and Gold Platform

In order to display the system image at its native resolution (1024x768) it is necessary to set properly the LCD monitor following the next procedure:

1. Press the key <AUTO>, the monitor will set itslef automatically.

4.5 Set the LCD's monitor brightness

Once the LCD monitor menu is locked the user can set brightness, color temperature and gamma using the control buttons (left, down, up, right).

- Press left or right once: the custom menu appears.
- Press up or down to select the item to be modified.
- Press left or right to change the value.
- Press Enter to confirm.

Note

Two additional menu cab be displayed: CAL and sRGB. NEVER use this menus.

The factory values for custom menu are:

Brightness 32% (in a dark environment it is possible to use 24%) Color temperature: 9300K (10000 is also possible) Gamma: 2.2



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5.0 NOVELTIES ON HARDWARE

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5.1 Virtual Navigator Licences Kit

The hardware key that enable the Virtual Navigator Licence has been replaced with a license number: following this modification the codes have been changed.

Licence type	New code	Old code
MyLab 70 – Navisuite Basic	8610273030	9730610058
MyLab 70 – Navisuite Advanced	8610273031	9730610059
Kit upgrade base-advanced	8610273032	9730610061

No hardware key is required using the new codes.

5.2 Monitors CRT

The CRT monitor LG F700B (code 9102854000) has been replaced by a new model (code 9102854010) for obsolescence reason. The new monitor is a SVGA 17", fully compatible. The monitor is delivered by Esaote fully calibrated.

5.3 Hook for probe cables

In order to avoid breakings to the hooks for probe cables (codes 8107368000 and 8108685000) they have been enforced using a new material PE low density instead of ABS. In addition, the standard washers (code 06381001021) have been replaced by oversize washers (0600000475).

When install the new hooks produced in PE material use also the oversize washers. Be sure to mount in the same system hooks produced with the same material.

Note

The oversize washers have been used also with the following codes:

9102580000, 9102580350, 9102580352, 9102580500, 9102580510 and 9102628000.



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To be applied to: ✓ MyL ✓ MyL

MyLab70 MyLab70 XVision

5.4 ICS board

The following modification has been introduced in the ICS boards (code 9501087000 and 9501087100 for MyLab Gold Platform and MyLab70 respectively):

the resistor R264 (33Ω , 62mW, 1%, code 3100000493) has been replaced by an inductance (code 6100000212).

This modification has been introduced with the purpose to eliminate the limitation on the maximum current supplied on VCC (pin J10 of the probe connector).

The modifications increase the IC of the part to 1. No modification has been requested for the parts on the field.

6.0 TRACEABILITY

6.1 MYLAB70 SOFTWARE VERSION 2.02

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Starting from the MyLab70 S/N 202 and MyLab70 X-Vision S/N 3196 the modification has been introduced.

In addition the following system has been reconfigured before delivering in order to introduce the modification.:

MyLab70 S/N: 87, 113, 134, 136, 146, 162, 177 and 178. MyLab70 X-Vision: 3065, 3094, 3116, 3123, 3139, 3140, 3141, 3142, 3143, 3144, 3145, 3146, 3147, 3148, 3149, 3150, 3151, 3152, 3154, 3156, 3157, 3158, 3159, 3160, 3161, 3162, 3163, 3164, 3166, 3170, 3172, 3173, 3174, 3175, 3176, 3177, 3178, 3179, 3180, 3181, 3182, 3183, 3184, 3185, 3186, 3187, 3188, 3189, 3190, 3192, 3193, 3194 and 3195.

6.2 ICS BOARD

Starting from the MyLab70 S/N 202 and MyLab70 X-Vision S/N 3124 the modification has been introduced. Refer to paragraph 5.4 ICS board for further information.





 To be applied to:
 ✓
 MyLab60
 ✓
 MyLab70

 ✓
 MyLab70 XVision
 ✓
 MyLab70 XVG

 TECHNICAL NOTE N° 104_B
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The revision B of this Technical Note is released to better clarify the paragraph 2.0 "Hardware modifications on IMC and ICS for TRT33".

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To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

1.0 MYLAB70 RELEASE 3.01

1.1 Release

Code	Content
8610293013	MyLab60, MyLab70 and MyLab70 XVision, Release 3.01 Software Pack
8610294013	MyLab70 XVG, Release 3.01 Software Pack

Software Pack for Rel. 3.01 is available for production line only and not for the upgrade on the field because of a potential reliability problem that requires additional tests. For this reason, we suggest to keep installed the version 2.05 until a new SW, superior to the 3.01, will be introduced.

Traceability.

The modification has been introduced starting from the following Serial Number: MyLab60 and MyLab70 X-Vision S/N 3416, MyLab70 XVG S/N 5067.

<u>1.2</u> Acceptable limits for the release 3.01

A strong effort has been made to reach an high level of robustness of software. A testing and debug activity has been carried out on the field, involving people of Esaote subsidiaries, but some minor problems are still open. A list follow:

- 1. At the stop of a VPan acquisition there is a latency time.
- 2. DICOM export of 4D study containing a big number of clips can fail.
- 3. When opening the worklist panel during a Dicom operation it is refreshed removing the selection just done.
- 4. When in calculation preset, pressing FACTORY SETTING reset all the calculation packet and not only the one displayed.
- 5. If you load a 3D exam from an USB memory, remove the USB key and press B-





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To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

Mode an error message appear.

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- 6. Opening the same image contained in a network directory from two different biolab instances can cause an error.
- 7. When executing an EF-AL measure, the Heart Rate value is not estimated.
- 8. Minor errors using MyLab Desk on Windows Vista.
- 9. When booting a system mounting the motherboard DFI (code 9102572000/100 IC=2 and 9102572600 IC=1) and a different configuration of devices is recognized (i.e. an USB drive or memory pen have been linked or unlinked to the system), the BIOS sequence ask you to press F1. Press F1 to go on with the booting.
- 10. Triplex doesn't work in cardio application.
- 11. The connection to the system of USB Hard Disk Drives with a current absorption higher then 500 mA could cause the malfunctioning of the ultrasound keyboard. In this case is suggested to reboot the system and supply the USB HDD using an external power supply.





To be applied to:✓MyLab60✓MyLab70✓MyLab70 XVision✓MyLab70 XVG

2.0 HARDWARE MODIFICATIONS ON IMC AND ICS FOR TRT33

2.1 Premise

The modification on the IMC (code 9501092000) and ICS (code 9501087000 for MyLab70 XVG; code 9501087100 for MyLab60, MyLab70 and MyLab70 X-Vision) boards has been introduced in order to arrange the MyLab for the use of the TRT33 biplane probe.

These modifications does not improve the performances of the system but are necessary only for the use of the TRT33 biplane probe. If you need to connect a TRT33 to the MyLab check that the IC of the IMC is 2 and the IC of the ICS is 2.

The modifications introduced on the IMC and ICS boards are described in the following paragraphs.

Traceability. Summarizing all the modification necessary for the use of TRT33 probe on MyLab has been introduced starting from the following Serial Number: MyLab70 S/N 216, MyLab60 and MyLab70 X-Vision S/N 3236, MyLab70 XVG S/N 5062.

2.2 IMC board

The following modifications have been introduced on the IMC board:

- the resistor R148 (33Ω, 62mW, 1%, code 3100000493) has been replaced by a new resistor (0Ω, SMD 0603 (1.6x.8x.5, 50V, code 3100000466),
- the PCB jumper W13 has been closed.

The modifications change the IC of the part to 1.

Traceability. The modification has been introduced starting from the following Serial Number:

MyLab70 S/N 202, MyLab60 and MyLab70 X-Vision S/N 3132, MyLab70 XVG S/N 5040.



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To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

The following additional modification has been introduced on the IMC board:

• the resistor R178 (220Ω , 62mW, 1%, code 3100000462) is no more mounted.

The modifications change the IC of the part to 2. No modification has been requested for the parts on the field if it's not necessary to connect theTRT33, otherwise it's possible to replace the board with a new one IC=2 or to perform the modifications (both IC 1 and 2 for board IC=0, IC 2 only for boards IC=1). To rework the board it's necessary to follow all the precautions against the electrostatic discharges. It's recommended to perform the modifications in a service laboratory using the right tools and not on the field.

Traceability. The modification has been introduced starting from the following Serial Number:

MyLab70 S/N 208, MyLab60 and MyLab70 X-Vision S/N 3227, MyLab70 XVG S/N 5050.

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2.3 ICS board

The following modification has been introduced in the ICS boards:

the resistor R264 (33Ω, 62mW, 1%, code 3100000493) has been replaced by an inductance (EMI filter, DC 1A 0603, Z=470Ω @100MHz, Rdc=0.2, code 6100000212),

The modifications increase the IC of the part to 1.

Traceability. The modification has been introduced starting from the following Serial Number:

MyLab70 S/N 202,

MyLab60 and MyLab70 X-Vision S/N 3124,

MyLab70 XVG S/N 5062.

The following additional modification has been introduced on the ICS board:

• the resistor R252 (220 Ω , 62mW, 1%, code 3100000462) is no more mounted.

The modifications change the IC of the part to 2. No modification has been requested for the parts on the field if it's not necessary to connect theTRT33, otherwise it's possible to replace the board with a new one IC=2 or to perform the modifications (both IC 1 and 2 for



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MyLab60 \checkmark MyLab70 XVision

 \checkmark

MyLab70 \checkmark

 \checkmark

MyLab70 XVG

board IC=0, IC 2 only for boards IC=1). To rework the board it's necessary to follow all the precautions against the electrostatic discharges. It's recommended to perform the modifications in a service laboratory using the right tools and not on the field.

Traceability. The modification has been introduced starting from the following Serial Number:

MyLab70 S/N 216, MyLab60 and MyLab70 X-Vision S/N 3236 MyLab70 XVG S/N 5047.



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To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

3.0 POWER SUPPLY PLUG

6

3.1 Premise

The modification has been introduced in order to prevent damage to the unit main plug and to avoid the unintentional detachment of the power cable.

The part is positioned in the lower backside of the unit (see next picture).



The codes 2400000678 and 8108760000 have been replaced by the code 9103194000 composed by the following items (showed in the next image):

- 1. 8108760100 metallic protection frame
- 2. 2800000170 main power green switch
- 3. 2400000803 main power plug
- 4. 2400000804 screws for power cable retainer
- 5. 8109117100 power cable retainer





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✓ MyLab60✓ MyLab70 XVision

- ✓ MyLab70
- ✓ MyLab70 XVG

3.2 How to proceed

1. Unscrew the two screws fixing the main plug.



- 2. Remove the power plug and the power switch unplugging the electrical cables.
- 3. Plug the new main power plug and the new main power green switch using the same electrical cables of point 2.



- 4. Fix the power plug and power switch on the metallic protection frame.
- 5. Fix it to the system using the same screws of the old plug.
- 6. Plug the power cord fixing it using the power cable retainer in order to avoid unintentional unplugging of the cord.



3.3 Traceability

The first S/N modified will be communicated in the next T.N.

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To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

4.0 NOVELTIES ON HARDWARE

4.1 Modification on SPR board

The following modification on the SPR board (code 9501101000) has been introduced:

• in order to prevent the breaking of the AT mosfet, the inductance L23 (10 μ H, 20%, code 6100000174) has been replaced by a new inductance (10 μ H, 20%, code 6100000173), the resistor R144 (220 Ω , 62mW, 1%, code 3100000462) is no more mounted and the resistor R143 (220 Ω , 62mW, 1%, code 3100000462) has been added. The modifications change the IC of the part to 2. No modification has been requested for the parts on the field.

Traceability.

The modification has been introduced starting from the following Serial Number: MyLab70 XVG S/N 5059.

The following additional modification has been introduced on the SPR board:

• in order to improve the weld the Printed Circuit Board (code 8531101005) has been replaced by a new one (code 8531101006), some resistors has been added and some others replaced. The modifications change the IC of the part to 3. No modification has been requested for the parts on the field.

Traceability.

The modification has been introduced starting from the following Serial Number: MyLab70 XVG S/N 5061.

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To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

4.2 Modification on DIP board

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The following modification on the DIP board (code 9501093000) has been introduced in order to increase the current consumption:

- the resistor R148 (2.7kΩ, 62mW, 1%, code 3100000446) has been replaced by a new resistor (3.3kΩ, 62mW, 1%, code 3100000448),
- the resistor R243 (220 Ω , 62mW, 1%, code 3100000462) is no more mounted.

The modifications change the IC of the part to 2. No modification has been requested for the parts on the field.

Traceability.

The modification has been introduced starting from the following Serial Number: MyLab70 S/N 226, MyLab60 and MyLab70 X-Vision S/N 3400, MyLab70 XVG S/N 5062.

4.3 Modification on ITR board

Modifications on the ITR board (code 9501089000) has been introduced in order to improve the stability of DAC.

The modifications change the IC of the part to 2. No modification has been requested for the parts on the field.

Traceability.

The modification has been introduced starting from the following Serial Number: MyLab70 S/N 209, MyLab60 and MyLab70 X-Vision S/N 3204.





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To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

5.0 RECOVERY PROCEDURE

6

Due to the introduction of new types of PC group a new dedicated kit has been introduced, with the purpose to restore the original conditions in the MyLab, after a defect in the HDD, or the replacement of this part or the PC group with another with different characteristics (for all the mentioned operations please refer to the right service manuals).

The code of the recovery DVD is 8610290001 Rev. A.

It's important to underline that the DVD code 8610290001 is only a backup of Window XP, in order to reinstall it, the original data and drivers correlated.

Applying this procedure all the existing data will be overwritten (archives of images, settings, drivers...), and will be impossible to save them after.

To install MyLab software version and all the other software will be necessary to use the software pack.

If there is the necessity to perform one upgrade, before proceed with it, please refer to the Technical Notes in order to see if it's necessary to perform any preliminary operations.

The necessary tools to proceed with a recovery are:

1-recovery DVD code 8610290001

2-SW release DVD code 8610293XXX for MyLab 70 and 8610294XXX for MyLab Gold Platform

3-USB service key code 8610264000

4-Virtual Navigator SW CD code 8620078XXX (only in units equipped with the Virtual Navigator, PC group code 9102572600 ALL ICs)

5.1 Preliminary operations

The first step to perform is to modify the BIOS, in order to boot directly with the DVD.

According the type of board installed there are different steps to perform. It's possible to recognize the motherboard looking at the code written in the internal label positioned on the PC Group:

-Motherboard FOXCONN (code 9102586000 IC=0 and 9102572000/100/600 IC=0)

Turn the unit on and keep pressed the key to enter in the BIOS

In case the unit requests a password write "laser"

In the main page using the arrows move to select the voice "Advanced BIOS Features" and press <Enter>

Move to the voice "First Boot Device" and push <Enter>





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In the menu which will appear select the voice "CDROM" and press <Enter>

Insert the recovery DVD code 8610290001 in the drive

Press <F10> to leave the BIOS and save the setup answering "Y" at the question that will appear; push <Enter>; the system will reboot automatically

-Motherboard ASUS (code 9102572000/100 IC=1)

Turn the unit on and keep pressed the key to enter in the BIOS

In case the unit requests a password write "laser"

In the page "MAIN" using the arrows move to select the voice "IDE configuration" and press <Enter>

Move to the voice "Onboard IDE Operate Mode" and push <Enter>

Move to the voice "Compatible mode" and push <Enter>

Move to the voice "IDE Ports settings" and push <Enter>

Move to the voice "Secondary P-ATA + S-ATA" and push <Enter> (in the case the PC group has the DVD drive in the primary IDE channel it's necessary to select the "Primary P-ATA + S-ATA")

Press <ESC> and using the arrows move to the menu "Boot" and select the voice "Boot Device Priority" and push <Enter>

Select the voice "1st boot device" and push <Enter>

Move to the description corresponding to the DVD and push <Enter>

Insert the recovery DVD code 8610290001 in the drive

Press <F10> to leave the BIOS and save the setup moving to the voice "OK" of the menu that will appear; push <Enter>; the system will reboot automatically

-Motherboard DFI (code 9102572000/100 IC=2 and 9102572600 IC=1)

Turn the unit on and keep pressed the key to enter in the BIOS

In case the unit requests a password write "laser"

In the main page using the arrows move to select the voice "Advanced BIOS Features" and press <Enter>

Move to the voice "First Boot Device" and push <Enter>

In the menu which will appear select the voice "CDROM" and press <Enter>

Insert the recovery DVD code 8610290001 in the drive

Press <F10> to leave the BIOS and save the setup answering "Y" at the question that will





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✓ MyLab70

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appear; push <Enter>; the system will reboot automatically

5.2 Operations with the restore DVD

The DVD 8610290001 is a bootstrap DVD, so inside there are all the files necessary to start automatically. At the reboot, after the modification of the BIOS parameters, the DVD will start the recovery procedure.

MyLab70 XVision

It will appear the following menu:

*******	* * * * * * * * * * * * * * * * * * * *	******
*****	ESAOTE S.p.A.	******
******	HDD Recovery Tool for 61XX	*******
******	861 0290 000 Rev. A	*******
*******	******	******
Press "1" fo	or PC type A	
Press "2" fo	or PC type B	
Press "3" fo	or PC type C	
Press "4" fo	or PC type D	
Press "5" to	o exit	

According the type of PC group inside the system, it will be necessary to select the recovery option.

Number	Used in units
1	Motherboard FOXCONN code 9102586000 IC=0
2	Motherboard FOXCONN code 9102572000/100
	IC=0
3	Motherboard ASUS code 9102572000/100 IC=1
4	Motherboard DFI code 9102572000/100 IC=2 and
	9102572600 IC=1

The table below summarize the various options:

Pushing one of the numbers the system will start automatically to erase the HDD and to reinstall all the XP software. This operation will take some minutes.

In case of warning messages of Ghost SW (message "license agreement warning") before



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starting to erase the HDD confirm the message with "OK". At the end of the procedure will appear the following message.

1		11	\boldsymbol{c}	U
*****	******	*****	*****	******
****	Remove any (CD from drives	***	******
*****	aı	nd	***	******
*****	reboot your	computer now	***	******
*****	*****	*****	*****	******

R:\>

Remove the recovery DVD from the drive and reboot the unit pressing <CTRL> <ALT>

5.3 Restore of the Bios setup

As soon as the system restarts push the key to restore the BIOS setup.

-Motherboard FOXCONN (code 9102586000 IC=0 and 9102572000/100 IC=0)

In case the unit requests a password write "laser"

In the main page using the arrows move to select the voice "Advanced BIOS Features" and press <Enter>

Move to the voice "First Boot Device" and push <Enter>

In the menu which will appear select the voice "Hard Disk" and push <Enter>

Press <F10> to leave the BIOS and save the setup answering "Y" at the question that will appear; push <Enter>; the system will reboot automatically

-Motherboard ASUS (code 9102572000/100 IC=1)

In case the unit requests a password write "laser"

In the page "MAIN" move with the arrows to select the voice "IDE configuration" and press <Enter>

Move to the voice "Onboard IDE Operate Mode" and push <Enter>

Move to the voice "Enhanced mode" and push <Enter>

Move to the voice "Enhanced mode support On" and push <Enter>

Move to the voice "P-ATA + S-ATA" and push <Enter>

Press <ESC> and using the arrows move to the menu "Boot" and select the voice "Boot Device Priority" and push <Enter>

Select the voice "1st boot device" and push <Enter>





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Move to the description corresponding to the Hard Disk and push <Enter>

Press <F10> to leave the BIOS and save the setup moving to the voice "OK" of the menu that will appear; push <Enter>; the system will reboot automatically

-Motherboard DFI (code 9102572000/100 IC=2 and 9102572600 IC=1)

In case the unit requests a password write "laser"

In the main page using the arrows move to select the voice "Advanced BIOS Features" and press <Enter>

Move to the voice "First Boot Device" and push <Enter>

In the menu which will appear select the voice "Hard Disk" and push <Enter>

Press <F10> to leave the BIOS and save the setup answering "Y" at the question that will appear; push <Enter>; the system will reboot automatically

5.4 Windows XP setup

When the unit will reboot will start the setup of the main SW.

Note: If the monitor show nothing, you have to turn off the MyLab and connect the monitor directly to the VGA video out of the computer (remember to disconnect the cable DVI between VGA video and PVA): this because the monitor doesn' t recognize the correct resolution. Turn on the unit and open Control Panel-Display-Settings, to set Screen Resolution at 1024 x 768 and Color quality at 32 bit, then press Advanced-Monitor, and set Screen refresh rate at 60 Hz. After this turn off the MyLab and set all the cable in the right position, and so you are able to finish the setup.

In the page "Welcome to Microsoft Windows" select the icon "Next" (in the lower right side)

In the page "What time zone are you in?" select the right time zone and check the checkbox for the voice "Automatically adjust clock for daylight saving time"; after press "Next"

In the page "The End User License Agreement" select the voice "Yes, I accept" and click "Next"

In the page "Help protect your PC" select the voice "Not right now", then "Next"

In the page "What's your computer's name?" set the unit name (the factory default is <unit name>_<s/n unit> i.e. 6100 for MyLab Gold Platform and 6150 for MyLab 70, i.e. 6150_0065), leave the field "Computer description" empty, then "Next"

In the page "What's your Administrator password?" set the password "laser" and click "Next"

In the page "Is this computer in a domain?" select "No, don't make this computer part of a



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	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

domain" then "Next

In the page "How will this computer connect to the Internet?" select "Skip" and do not set any value

In the page "Ready to register with Microsoft?" select the voice "No, not at this time", then "Next"

In the page "Who will use this computer?" set in the field "Your name" the name "Esaote", then "Next"

In the page "Thank you!" click on "Finish", Windows will reboot.

In the page of login of Windows press two times the keys <Ctrl><Alt>, in the menu that will appear set the User Name as "Administrator" with the password "laser" and click on the key "OK"

If it will appear the message "Your password expires today. Do you want to change it now? " select "NO"

If will appear a "Soundmax" window, check the checkbox "don't detect new audio device in the future" and confirm with OK.

Push the key "Cancel" in all the menu "Found New Hardware Wizard" that will appear In the menu "Start" select the voice "Settings" and then "Control Panel" and double click on the icon "Administrative Tools" and then "Computer Management"

In the menu in the left part select the voice "Local Users and Groups" and in the right part double click on "Users"

In the right part go to the voice "Esaote" and open the menu with a click on the right key of the system, select "Delete" and click the key "Yes" in the menu that will appear

Always in the right menu select the voice "Administrator" and open the menu with a click on the right key of the system and select "Properties"

In the menu that will appear disable the voice "User must change password at next logon" and enable the voice "Password never expires", press the key "apply" and then "OK" Close all the menu and reboot the unit.

5.5 MyLab SW setup

Follow the Software Pack Installation Procedure in order to install the MyLab Software according the SW release you want install.



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✓ MyLab60✓ MyLab70 XVision

✓ MyLab70✓ MyLab70 XVG

1.0 RELEASE 3.11

1.1 <u>Release</u>

Code	Content
8610293015	MyLab60, MyLab70 and MyLab70 XVision, Release 3.11 Software Pack
8610294015	MyLab70 XVG, Release 3.11 Software Pack

To speed-up distribution both codes can be downloaded via internet from <u>ftp.esaote.com</u> site (user: lcommon, password BloodyMary).

Note

Be sure to burn a CD/DVD with the software release using a PC with installed an antivirus updated to the latest version.

Traceability.

The first s/n modified will be communicated in the next T.N.

1.2 <u>Novelties</u>

Here below, the major features introduced with Software Release 3.11 are listed:

- 1. TEE022 (cod. 9600170000) multiplane transesophageal probe. To connect TEE022 probe to already delivered unit is mandatory to order and install the "TEE upgrading kit" p/n 9501092100. The kit includes a new revision of IMC board + TEE module. For detailed instruction please refer to next chapter "TEE022 Probe".
- 2. CMM Compass M-mode (Option)
- 3. QIMT Quality Intima Media Thickness (Option)

2



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MyLab60 \checkmark MyLab70 XVision

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MyLab70 XVG

4. HPRF is now available on all probes.

Note

HPRF with MyLab 70XVG correctly works only if the ITR boards (code 9501089000) on the system have IC=2 or superior. No modification has been requested for the parts on the field. The modification has been introduced starting from the MyLab70 XVG Serial Number 5064

5. To enhance systems modularity, Automatic gain and Tp-view become options.

Note

When upgrading units to release 3.11, Automatic gain and Tp-view feature will be no more available. To re-enable these features it's necessary to type the relevant licenses on the base of unit serial number. A list with Auto-gain and Tp-view licenses is provided free of charge for the whole installed basis.

Part num	bers of	new opti	ions intr	oduced	with]	Rel. 3.11
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	MyLab 60	MyLab 70	MyLab 70 X-Vision	MyLab 70 XVG
Automatic gain	8610303040	8610273040	8610273040	8610304040
Tp-View	8610303041	8610273041	8610273041	8610304041
СММ	8610303020	8610273020	8610273020	8610304020
QIMT	8610303037	8610273037	8610273037	8610304037



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1.3 <u>Solved bugs</u>

- 1. Box, beam-line and profile shifted in B+CFM+PW when zoom is active
- 2. Gate/image not correlated in B-mode when zoom is active

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- 3. The Device Serial Number field is not present in the DICOM images
- 4. B-mode image deterioration when CFM is activated
- 5. RT-Biolab synchronization
- 6. The position of the gate (depth and line) is not updated when using cine memory in freeze
- 7. Pressing factory default, the presets are deleted but the display is not refreshed
- 8. Problems in reading the probe codes
- 9. Crash due to absence of TVM process
- 10. Error message when switching from the CA431 probe to the 5CW probe

1.4 Acceptable limits for the release 3.11

A strong effort has been made to reach an high level of robustness of software. A testing and debug activity has been carried out on the field, involving people of Esaote subsidiaries, but some minor problems are still open. A list follow:

1. When exporting in Dicom CFM clips not compressed, the red and blue colors on the image are reversed. The solution is to use CFM clip compressed.

1.5 <u>Software update</u>

An instruction file named "Install_ver3.11" is contained inside the Software Pack DVD and being in RTF format it can be opened directly on MyLab units; please refer to this file to know the software update procedure.

Note

It is mandatory to update Nero to the version 7.5 if it isn't already installed. For detailed instruction please refer to next paragraph "Installing Nero 7.5". The new release of the Nero SW is enclosed in the 3.11 Software PACK DVD.



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1.6 Installing Nero 7.5

To check the installed version, open Nero clicking on Start \rightarrow Programs \rightarrow Nero \rightarrow Nero StartSmart or Start \rightarrow Programs \rightarrow Nero 7 Essentials \rightarrow Nero StartSmart Essential if "Nero StartSmart" is missing, click on "NERO" writing on top-left and check the installed version. If the version is 7.5 the system doesn't require any update, otherwise access to the folder \Service\Nero_7_5\CDS\Nero and run setupx.exe to start the installation.

- 1. Press the **Nero 7 essentials** button and, if required, accept to uninstall the old version of Nero clicking OK.
- 2. Click OK when the system ask to reboot, the system doesn't reboot but it continues the installation. Press NEXT.
- 3. Accept the license agreement and press NEXT.
- 4. Customer Information window, press NEXT.
- 5. Select the option CUSTOM as Setup Type and press NEXT.
- 6. In language selection English is selected by default, press NEXT.
- 7. In the dialog custom setup window about the list of modules to install, select all modules except NeroBackupIt, Nero CoverDesigner and InCd. To exclude an item, click on it and select "This feature will not be available". Press NEXT.
- 8. Press INSTALL.
- 9. When the option window appear, press Remove all then NEXT.
- 10. Press Finish.
- 11. Confirm to restart the system pressing YES.
- 12. After rebooting if in the Windows application bar a Nero Search icon is displayed, click on the arrow near the icon to open Nero search option window. Press the Option button and deselect "Integrate Nero Search into the Taskbar" and "Integrate Nero Scout in Windows Explorer". Press OK and close Nero Search window.
- 13. Open Nero clicking on Start → Programs → Nero 7 Essentials→ Nero StartSmart Essential press NO when the system ask "Would you like to allow Nero ProductSetup to check for updates of your installed Nero products?", then deselect "Check for updates" and press OK. Confirm to quit pressing YES. Close Nero.
- 14. Run the program DMA Manager of Nero (Start → Programs → Nero 7 Essentials→ Tools → Nero DMA Manager) and enable the DMA access for all the CD/DVD drives installed in the system.



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2.0 **TEE022 PROBE**

2.1 Premise

Release 3.11 supports the TEE022 transesophageal probe. TEE022 (code 9600170000) is a phased array probe with 8-3 MHz of frequency range.

To connect TEE022 to MyLab some modifications on the IMC board are required and it is necessary to mount on the IMC board an additional TEE module.

No modification has been requested for the parts on the field if it's not necessary to connect theTEE022, otherwise it's possible to replace the board with a new one IC=2/2 or to perform the modifications. To rework the board it's necessary to follow all the precautions against the electrostatic discharges. It's recommended to perform the modifications in a service laboratory using the right tools and not on the field.

However a "TEE upgrading kit" (code 9501092100) is available. The kit includes a new revision of IMC board (code 9501092000 IC=2/2), the TEE module (code 9501203100) and two screws.

2.2 Hardware modifications on IMC board

The modification on the IMC (code 9501092000) boards has been introduced in order to arrange the board to correctly work with the TEE module.

These modifications does not improve the performances of the system but are necessary only for the use of the TEE022 transesophageal probe. If you need to connect a TEE022 to the MyLab check that the IC of the IMC is 2/2.

The following modifications have been introduced on the IMC board (they are possible starting from a board already IC= 2, otherwise first it's necessary the upgrade to that IC-see T.N. 104 B):

- the resistor R110 (2.2k Ω , 62mW, 1%, SMD 0603, code 3100000447) has been replaced by a new resistor ($2k\Omega$, 0.1W, 0.1%, SMD 0805, code 3100000426),
- the resistor R112 (2.2k Ω , 62mW, 1%, SMD 0603, code 3100000447) has been replaced by a new resistor (0Ω , SMD 0603, code 3100000466),
- the resistor R269 (0 Ω , SMD 0603, code 3100000466) is no more mounted.
- the resistor R270 (0 Ω , SMD 0603, code 3100000466) has been added. It is possible • to move the resistor R269 in R270.





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• The version/revision have been updated as follow:

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- Version: R180 mounted, R174 mounted, R173 not mounted, R282 mounted;

MyLab70 XVision

- Revision: R179 mounted, R176 mounted, R177 not mounted, R178 mounted.

The modifications change the IC of the part to 2/2.

2.3 How to mount TEE module on IMC board

The TEE module (code 9501203100) allows to drive the probe by MyLab software and check the temperature of the tip of the probe.



TEE module



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- To be applied to:
- MyLab60

- ✓ MyLab70
- MyLab70 XVision
- MyLab70 XVG
- 1. On the IMC board locate the area arranged to host the TEE module



2. Insert the TEE module in the socket





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MyLab70

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3. Fix the TEE module using the screws on the back of the IMC board



2.4 <u>Traceability</u>

The first s/n modified will be communicated in the next T.N.



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 ✓ MyLab70 XVG

3.0 POWER SUPPLY PLUG

This paragraph is intended to integrate the procedure described in the TN104_B because sometime may happens on some MyLab family devices that the insertion of the kit 9103194000 (main connector and main switch for MyLab family devices) is difficult.

3.1 <u>Procedure</u>

- 1. Turn the unit off.
- 2. Remove the main cord.
- 3. Unscrew the two screws fixing the plug to the chassis.



- 4. Extract the plug and disconnect the jumpers from the plug.
- 5. Connect the jumpers in the same position on the new plug REF 9103194000 (please refer also to the picture below).



6. Insert the plug into the cart chassis, being careful to keep the plug lining up to the chassis as much as possible.

Note

It may be necessary to force the insertion of the plug.



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✓ MyLab70

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- 7. If the insertion of the plug is not possible in spite of the above described operations, disconnect the jumpers from the plug.
- 8. Remove the Mains Power Group (unscrewing the screws indicate in the next image) to gain full access to the main plug hole.



9. Identify the hole part that obstruct the plug insertion.



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		DOCUMENT:	APPARATUS:	DATE:
		TECHNICAL NOTE	61XX	26/10/2007

1

✓ MyLab60

- MyLab70
- \checkmark MyLab70 XVision

MyLab70 XVG \checkmark

10. Enlarge the hole dimension using a flat file as shown in the picture below.



- 11. Using a soft cloth slightly dampened with water remove the filing residuals by accessing to the hole from the Mains Power Group board side.
- 12. Install the Mains Power Group board.
- 13. Connect the jumpers in the same position on the new plug REF 9103194000, as described above.
- 14. Fix the plug to the chassis using the same screws fixing the previous plug.
- 15. Plug the power cable and fix it with the retainer to avoid unintentional disconnection.

Once replaced the main plug, perform the safety test according to the instructions provided in the Service Manual.

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		DOCUMENT:	APPARATUS:	DATE:
		TECHNICAL NOTE	61XX	26/10/2007

To be applied to: MyLab60

MyLab70 XVision

MyLab70

MyLab70 XVG

4.0 Reliability problems on ITR boards on MyLab70XVG and MyLab90

Following the growth of reliability problems on ITR boards (code 9501089000) an accurate analysis of the product has been performed and all the problems on ITR boards have been identified. The analysis carried out the following problems:

- 1. Bad soldering: an high number of defective soldering is present in the several connections of the hybrids;
- 2. Mechanical problems: the alumina of the hybrids originally elastic may become rigid when in contact with tin of soldering and consequently get broken;
- 3. Wrong resistors on a limited number of boards. This problem has been already solved by replacing the wrong boards;
- 4. Noise on the image generate in case of low emission voltage (it happens in CnTI only).

To solve the problems above mentioned, the following action will be implemented:

- In short time a more reliable soldering method will be adopted and the hybrid will be boxed to prevent the breakage and noise;
- In medium time the board will be redesigned to include the hybrids in it.

The first S/N modified will be communicated as soon as available.

It is possible that the above mentioned defects appear on the devices on the field, except point 3 (wrong components).
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		DOCUMENT:	APPARATUS:	DATE:
		TECHNICAL NOTE	61XX	26/10/2007

To be applied to:	\checkmark	MyLa

✓ MyLab60✓ MyLab70 XVision

✓ MyLab70
 ✓ MyLab70 XVG

5.0 NOVELTIES ON HARDWARE

5.1 <u>Probe holder</u>

In order to prevent breaking, the 6100 probe holder (code 9102619010) has been replaced by a new reinforced one (code 9102619110), and the 6150 probe holder (code 9102619000) has been replaced by a new reinforced one (code 9102619100).

The reinforcing consists on an additional check pin to avoid the undesired movements of the probe holder causing the breaking; consequently the fixing screw has been lengthened (old code 06041011265, new code 06041011289).

To replace on the field broken probe holder two kits containing all the necessary items have been created:

- 9103216100 for 6100
- 9103216000 for 6150

Traceability.

The first s/n modified will be communicated in the next T.N.

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TECHNICAL NOTE 61XX 26/10/2007			TECHNICAL NOTE	61XX	26/10/2007

To be applied to:

6

✓ MyLab60 MyLab70 XVision MyLab70

 \checkmark MyLab70 XVG

5.2 **Modification on PVA board**

The following modification on the PVA board (code 9501110000) has been introduced in order to improve the reliability of the board:

• U25 and U27 (code 5100000459) are no more mounted

 \checkmark

- the pins 21 and 23 of connector P1 are short-circuited
- a resistor (825Ω , 62mW, 1%, code 3100000462) has been inserted between pin 5 and pin 21 of P1
- the grounds of C148 and C142 have been short-circuited •

The modifications change the IC of the part to 3. No modification has been requested for the parts on the field because the board are already tested.

Traceability.

The modification has been introduced starting from the following Serial Number: MyLab70 S/N 236, MyLab60 and MyLab70 X-Vision S/N 3497, MyLab70 XVG S/N 5092.

5.3 Magnets securing upper metallic cover

The four magnets that secure the upper metallic cover have been modified to better fix it to the MyLab chassis by a screw in addition to the glue.

The previous code 1000000142 has been replaced by the NEW code 1000000165 and in four screws (code 0600000318) have been added.

No modification has been requested for the parts on the field.

Traceability.

The first s/n modified will be communicated in the next T.N.





 To be applied to:
 ✓
 MyLab60
 ✓
 MyLab70

 ✓
 MyLab70 XVision
 ✓
 MyLab70 XVG

 TECHNICAL NOTE N° 109
 ✓
 MyLab70 XVG

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1.1System error message at first power up	2
1.2System error message at first power up	3
2.0MODIFICATION ON DIP BOARD.	6





To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

1.0 MODIFICATION ON PVA BOARD

1.1 System error message at first power up

The following modification on the PVA board (code 9501110000) has been introduced in order to solve the error due to a communication problem between the i2C logic bus and the PVA board (see TN 105):

 a resistor (560Ω, 1/8W, 1%, code 3100000372) has been inserted between pin 7 and pin 8 of P7 (not mounted)

The modifications change the IC of the part to 4. The modification is requested in case of specific problem.



Traceability.

The first s/n modified will be communicated in the next T.N.

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		TECHNICAL NOTE	61XX	22/01/2008

To be applied to: ✓ MyLab60 ✓ MyLab70 XVision

√ MyLab70

MyLab70 XVG

1.2 System error message at first power up

The following modification on the PVA board (code 9501110000) has been introduced in order to solve the system error message at first power up (see TN 105):

- U25 and U27 (code 5100000459) are no more mounted
- the pins 21 and 23 of connector P1 are short-circuited
- a resistor (825Ω, 62mW, 1%, code 3100000462) has been inserted between pin 5 of U25 and pin 21 of P1
- the grounds of C148 and C142 have been short-circuited

The modifications change the IC of the part to 3. The modification is requested in case of specific problem.



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		TECHNICAL NOTE	61XX	22/01/2008

To be applied to:✓MyLab60✓MyLab70✓MyLab70 XVision✓MyLab70 XVG



Details of the modifications (U25 and U27 has 8 pins).





Details of the modification (connection of the grounds of C148 and C142)

Traceability.

The modification IC=3 has been introduced starting from the following Serial Number: MyLab70 S/N 236, MyLab60 and MyLab70 X-Vision S/N 3497, MyLab70 XVG S/N 5092.



MyLab World One World One Language	-82	DOCUMENT:	APPARATUS:	DATE:
		TECHNICAL NOTE	61XX	22/01/2008
		-		

To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

2.0 MODIFICATION ON DIP BOARD

4

The following modification on the DIP board (code 9501093000) has been introduced in order to solve a problem on the clock line:

This will create random hanging with system error message due to the DIP board.

• a ceramic capacitor 10 pF 50 V has been inserted in position C343.

The modifications change the IC of the part to 3. The modification is requested in case of specific problem.



Traceability.

The first s/n modified will be communicated in the next T.N.





To be applied to: ✓ MyLab60 ✓ MyLab70 ✓ MyLab70 XVision ✓ MyLab70 XVG TECHNICAL NOTE Nº 111

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3.0HOW TO SET THE TIME ZONE ON MYLAB	4





To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

1.0 MODIFICATION ON PVA BOARD

In some cases the mechanical support of the PVA board (code 9501110000) may not allow the correct insertion of the board in its slot. When the insertion of the board is difficult or when the board unplug by itself it is suggested to remove the mechanical support.

To remove the mechanical support just unscrew the two screws that fix it to the board.





MyLab World One World One Language	DOCUMENT:	APPARATUS:	DATE:
	TECHNICAL NOTE	61XX	25/02/2008

To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

2.0 MODIFICATION ON BSC BOARD

The following modification on the BSC board (code 9501097000) has been introduced in order to prevent images problems and system errors due to the BSC board:

The resistor R54 (2.7kΩ, 62mW, 1%) has been replaced by a new resistor (3.3kΩ, 62mW, 1%).



The modifications change the IC of the part to 2. The modification is suggested in case of specific problem.





To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

3.0 HOW TO SET THE TIME ZONE ON MYLAB

This procedure is required when the MyLab is installed in a country with a time-zone different from the factory one (Greenwich)

To change the time-zone:

- 1. Turn MyLab (with the service key inserted) on.
- 2. Open "Date and Time" in Control Panel
- 3. To change your time zone, click the Time Zone tab. In the box above the map, click the drop-down arrow, and then click your current time zone.



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		TECHNICAL NOTE	61XX	05/05/2008

To be applied to: ✓ MyLab60 ✓ MyLab70 ✓ MyLab70 XVision ✓ MyLab70 XVG TECHNICAL NOTE Nº 113

1.0 BIOS UPDATING

-

In some case the field reported possible blocks during the shutdown of the MyLab units mounting the DFI motherboards.

To solve this problem a dedicated CD has been introduced with the purpose to update the BIOS of the DFI motherboard in the PC group.

The code of the CD is 8610296001.

Update the BIOS only in case of block during the shutdown in the unit mounting DFI motherboards.

The SW can be downloaded in the protected web site csa.etosea.com.

1.1 <u>PROCEDURE</u>

This operation must be done on the units produced with the Motherboard DFI (code 9102572000/100 IC=2 and 9102572600 IC=1) excepted the ones already update in factory (see traceability).

Look at the bottom line on the first screen after power up (the one with the Energy Star logo on the right top corner), if the date is 04/04/2006 you don't have to update the BIOS: the operation was already done.

For the Motherboard FOXCONN (code 9102586000 IC=0, 9102572600 IC=0 and 9102572000/100 IC=0) and Motherboard ASUS (code 9102572000/100 IC=1) the update is not required.

- 1. Turn the unit on and keep pressed the key to enter in the BIOS
- 2. In case the unit requests a password write "laser"





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To be applied to: ✓

✓ MyLab60✓ MyLab70 XVision

✓ MyLab70

✓ MyLab70 XVG

- 3. Using the arrows move to the menu "Advanced BIOS Features" and select the item "First Boot Device" and press <Enter>. Using the arrows move to the item "CDROM" and press <Enter>.
- 4. Insert the CD code 8610296001 in the drive
- Press <F10> to leave the BIOS, answer "Y" to confirm and press <Enter>, the system will reboot automatically. The CD 8610296001 is a bootstrap CD, so inside there are all the files necessary to start automatically.
- 6. At the reboot the CD will start the updating procedure. It will appear the following menu:

7. Press 1 to update the BIOS for the Motherboard DFI (code 9102572000/100 IC=2 and 9102572600 IC=1), the system will require a confirm; answering yes (Y) the updating starts automatically. This operation will take few minutes: during this phase don't turn off the machine. At the end of the procedure will appear the following message:



8. Remove the CD from the drive and reboot the unit

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		TECHNICAL NOTE	61XX	05/05/2008

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To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

- 9. As soon as the system restarts press the key to restore the BIOS setup.
- 10. If the following message appears press F1: CMOS Settings Wrong Press F1 to Run SETUP Press F2 to load default values and continue
- 11. In case the unit requests a password write "laser", otherwise set the password: using the arrows move to the menu "Set Supervisor Password" and press <Enter>, set the password "laser" and press <Enter>, rewrite the password and press <Enter>.
- 12. Using the arrows move to "Load Fail-Safe Defaults" and press <Enter>. Answer "Y" to confirm and press <Enter>.
- 13. Press <F10> to leave the BIOS, answer "Y" to confirm and press <Enter>. The system will reboot.





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To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

TECHNICAL NOTE Nº 114

Licence Number request at first start up after the update to release 4.02

Release 4.02 introduces a new Licence Number to identify the unit model (i.e. MyLab60, MyLab70XVG, etc.).

The Licence Number is automatically calculated from a database included in the software release, but in case of missing/wrong information the system shows the following windows requiring to manually insert the Licence Number.

		HARDWARE ID	LICENSE	NUMBER		
MOD	EL	000000001099005A				OFF
	ОК			VERI	FΥ	

If this mask appears we suggest to follow these steps:

- 1) Shut down the system.
- 2) Switch on up the system with the service key inserted.
- 3) Copy in the root of the disk (C:\) the file attached to this Technical Note (ModLst.bin) accepting to overwrite the existing file. DO NOT INSERT THE FILE BEFORE STARTING WITH THE UPGRADING PROCEDURE TO RELEASE 4.02. USE IT ONLY IN CASE THE PREVIOUS WINDOWS APPEARS.
- 4) Start the MyLab software double clicking on the start.exe icon.
- 5) This operation have to update the licenses field automatically.

NOTE: It's compulsory, before to proceed with the upgrade to release 4.02, to have also the file ModLst.bin available.



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To be applied to: ✓ MyLab70 XVision ✓ MyLab70 XVG

TECHNICAL NOTE N° 115

Problems in systems equipped with Virtual Navigator

It's possible to have two different type of problems in units equipped with Virtual Navigator:

- Low resolution in Virtual Navigator screen.
- The NaviSuite Sw doesn't start at the boot sending a warning message.

Low resolution in Virtual Navigator screen

After the upgrade to 4.02 release there is the possibility in old units that the systems is not able to set the screen resolution to the right value setting the unit with low resolution

With the 4.02 upgrade the units install an updated driver for the Video Board.

In case of model Sapphire Radeon 1550X the driver doesn't create any problem.

For old boards this driver may create a problem with the screen resolution for Virtual Navigator.

NOTE: Even if there is the problem with Virtual Navigator the ultrasound image remains correct

As default Virtual Navigator this has to be set as 1280x1024, but the system set it as 640x480 and, for this reason, the Virtual navigator screen is enlarged in an unreadable way.

Also setting the resolution in the correct way doesn't solve the problem.

The solution is to uninstall the new driver and install the old.

The procedure is the following:

- 1. Uninstall the old drivers running cat-uninstaller.exe in the folder Service\Drivers\VGA\RADEON9600_V5_8. Continue till the request of removing, choose Remove, then click Next and REMOVE. Wait for the end of uninstallation and reboot the system.
- 2. Install the new driver. During this phase the graphic resolution is very low, do not mind it. Run 5-8_xp-2k_dd_ccc_wdm_enu_25203.exe in the folder





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To be applied to: ✓ MyLab70 XVision ✓ MyLab70 XVG Service\Drivers\VGA\RADEON9600_V5_8. If "Security Warning" appears click RUN. Accept the default installation folder, accept the License Agreement and choose Express. Reboot the system and when "ATI Registration Choice" window appears choose Never remind me and click OK.

 Check the monitor resolution and frequency. Open Control Panel → Display → Settings. Screen resolution for the primary display must be 1024 x 768 and Color quality 32 bit. Screen resolution for the secondary display must be 1280 x 1024 and Color quality 32 bit. Press Advanced → Monitor, Screen refresh rate must be 60 Hz.

To check about the Video board installed the procedure is the following:

"Start→Control Panel→Display→Adapter"

In the image is indicated the new type of board, compatible with the new driver.

Plug and Play Mo	nitor and SAPPHIRE	Radeon X1550 Prope	rties 🛛 ? 🔀
Color Mar	nagement	CATALYST Con	trol Center
General	Adapter	Monitor	Troubleshoot
Adapter Type-			
SAPPHI	RE Radeon X1550		
		Properties	
		Liebewee	
Adapter Informati	on		
Chip Type:	ATI display adapter AG	P (0x7183)	
DAC Type:	Internal DAC(400MHz)		
Memory Size:	256 MB		
Adapter String:	SAPPHIRE Radeon X1	550	
Bios Information:	11x-CC8513S7-002		
			- I
List All Modes			





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TECHNICAL NOTE	61XX	13/06/2008

To be applied to:

MyLab70 XVision
MyLab70 XVG

NaviSuite doesn't start

In few cases may happen that during the start-up the following warning message appears:

Components not	found 🛛 🔀
Tracker not f Do you want to	ound! retry?
OK	Annulla

The error depends on the unsuccessful initialisation of the Ascension board.

Selecting *YES* the system repeat the initialisation, but generally the warning message is displayed again. It is strongly suggested to restart the system (power off and power on) till the message do not appear. Wait few seconds before power on.

Selecting *CANCEL* the message is not more displayed. In this case the ultrasound scanner correctly works but the navigation features will be not available.





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To be applied to:	✓ MyLab60	\checkmark	MyLab70
	MyLab70 XVision	\checkmark	MyLab70 XVG
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To be applied to:

✓ MyLab60✓ MyLab70 XVision

✓ MyLab70✓ MyLab70 XVG

1.0 MODIFICATION ON PSE BOARD

It may happen that sometime at the start-up the system doesn't find the hard disk sending a message of "disk not found". To solve this problem a modification to the PSE board (9501109000) has been introduced.

The PSE board is inside the PC group.

The modification are the following:

- Replace R126 with a new one 470 KOhm 62 mW 1% tollerance (old value 150 KOhm)
- Replace C131 with a Ceramic capacitor 10uF 10V 10% tollerance

(brand:	AVX	code 1206ZD106KA(T2A)
	KEMET	code C1206C106K8PACTU
	MURATA	code GRM31CR61A106KA01L)



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To be applied to:	✓ MyLab60	✓ MyLab70
	MyLab70 XVision	✓ MyLab70 XVG

2.0 REINFORCEMENT OF THE CONNECTION OF THE HDD

It may happen that sometime the communication between the system and the Hard Disk doesn't correctly work.

The problem is due to a bad connection of the SATA cable on the Hard Disk.

In order to reinforce the connection has been introduced a clamp; in the following picture you can see how to fix.



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To be applied to: ✓ MyLab60 ✓ MyLab70 ✓ MyLab70 XVision ✓ MyLab70 XVG

3.0 PRELIMINARY CHECK

It may happen that sometime the system arrived with the fans not running. In all the cases this problem was due to the cable not connected. For this reason is necessary to check if the fans are running. If not remove the SPR board and check if the fan cable (red and black) is completely connected.

If the fans are not working the unit may shut down due to the thermal protection.

4.0 NEW IMC BOARD

A new release of the IMC board (9501092010) has been introduced. This board is full compatible with the old code 9501092000 and with the IMC+TEE control (9501092100). The new IMC 9501092010 has integrated all the circuits to control the TEE probe.

The new IMC it is running starting from software release 4.02.

4.1 TRACEABILITY

In the following units has been already introduced the new IMC. MyLab60/70X-Vision from SN 3751 + 3720, 3729 till 3733, 3742 till 3749. MyLab70 from SN 259. MyLab70XVG from SN 5229.



To be applied to: ✓ MyLab60 ✓ MyLab70 ✓ MyLab70 XVision ✓ MyLab70 XVG TECHNICAL NOTE N° 118

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To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

1.0 MyLab Release 5.01

1.1 <u>Release</u>

Code	Content
8610293024	MyLab60, MyLab70 and MyLab70 XVision, Release 5.01 Software Pack
8610294024	MyLab70 XVG, Release 5.01 Software Pack

To speed-up distribution all codes can be downloaded via internet from <u>ftp.esaote.com</u> site (user: lcommon, password BloodyMary).

Note

Be sure to burn a CD/DVD with the software release using a PC with installed an antivirus updated to the latest version.

1.2 <u>Software update release 5.01</u>

An instruction file named "Install_ver5.01" is contained inside the Software Pack DVD and being in RTF format it can be opened directly on MyLab units; please refer to this file to know the software update procedure.

For systems where there is the Virtual Navigator installed it's also necessary the upgrade of its SW. On the FTP site is available the SW pack "8620078005".

Note

It is mandatory to update Nero to the version 7.5 if it isn't already installed. For detailed instruction please refer to the paragraph "Updating Nero to version 7.5" contained in "Install_ver5.01" file. The new release of the Nero SW is enclosed in the 5.01 Software PACK DVD.





To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

1.3 <u>Video board check</u>

NOTE: Before to proceed with the SW upgrade check the type of video board installed (go in Control Panel \rightarrow Display \rightarrow Settings \rightarrow Advanced \rightarrow Adapter):

In case of units equipped with Video board RADEON X1550 it may happen it will be necessary to replace the video board drivers (from the ones installed automatically) at the end of the SW installation of the release 5.01. It's possible that the system will hang with a system error message at the first startup of the MyLab SW. In case it will be sufficient to perform the update at the next startup, entering as administrator.

<u>Do not update the drivers before to install the release 5.01 because with the setup the</u> <u>drivers are automatically replaced.</u>

Here below you have the example of the message you may find in the echos log files:

13:31:10.281 G	SWS: Init3D4D 3D Loop(0)
13:31:10.812 S	system.NullReferenceException: Object reference not set to an instance of an object.
at Esaote.ThreeD	D.MainWindow.ThreeDMainWindow.Init(DeviceFamily Device)
at Esaote.ThreeD	D.MainWindow.ThreeDMainWindow.InitializeThreeDMainWindow(DeviceFamily Device, String pWork3DDir)
at Esaote.ThreeD	D.MainWindow.ThreeDMainWindowctor(DeviceFamily Device, String pWork3DDir, String pLogDir)
at CEcoFrame.In	it3D4d(CEcoFrame*)
13:31:10.828	
EcoFrameOpenC	Close.cpp 1105 ERROR:

CEcoFrame::Init3D Create Error

The procedure for the update is the following:

 Go in "Control Panel → Display → Settings → Advanced → Adapter". Open Properties → Driver, press button Update Driver..., select the option No, not this time → NEXT → select the option Install from a list or specific location → NEXT → select the option Include this location in the search → BROWSE, select the SW Pack directory service\DRIVERS\VGA\ATI_8.493_05122008 and confirm.





To be applied to:

MyLab60

✓ MyLab70

MyLab70 XVG

- 2. Wait the end of installation, press Finish and reboot
- 3. At restart, start executable agp-hotfix_xp32_63478.exe in the SW Pack directory service\DRIVERS\VGA\ATI_8.493_05122008\ HotFix AGP.

MyLab70 XVision

NB: the language of this installation depends on regional settings set on the equipment

Accept the default installation folder, accept the License Agreement, choose **Custom** installation and confirm, remove option **Catalyst Control Center**, select option **ATI Display Driver** and confirm. Press **Continue Anyway** when requested. Wait the end of installation and then reboot the system.

For the systems with Virtual Navigator is mandatory update the VGA driver when installing/updating the release 5.01 (see paragraph 1.4).

1.4 <u>New VGA drivers for equipments with Virtual Navigator</u>

For the systems with Virtual Navigator is mandatory update the VGA driver when installing/updating to the release 5.01. The procedure follows.

First of all check the VGA adapter installed in the system: opening Control Panel \rightarrow Display \rightarrow Settings \rightarrow Advanced \rightarrow Adapter; the following window will appear:



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To be applied to:	✓ MyLab60	\checkmark	MyLab70
	✓ MyLab70 XVision	\checkmark	MyLab70 XVG
Plug and Play Monitor and SAPPHIRE	Radeon X1550 Properties 👘 🛛 🔀		
Color Management	CATALYST Control Center		
General Adapter	Monitor Troubleshoot		
SAPPHIRE Radeon X1550			
	Properties		
Adapter Information			
Chip Type: ATI display adapter AGP	(0x7183)		
DAC Type: Internal DAC(400MHz)			
Memory Size: 256 MB			
Adapter String: SAPPHIRE Radeon X15	50		
Bios Information: 11x-CC8513S7-002			
List All Modes			
	OK Cancel Apply		

- If the Adapter Type is "RADEON 9600 Series" or "RADEON 9550 / X1050 Series"
 - 1. Uninstall drivers running cat-uninstaller.exe in the folder the current Service\Drivers\VGA\Radeon9600_v5_8. Continue till the request of removing, choose Remove, then click Next and REMOVE. Wait for the end of uninstallation and reboot the system. Ignore any error displayed.
 - 2. Install the driver version 8.162.0.0. During this phase the graphic resolution is very low, do not mind it and press Cancel in order to ignore all the requests to install drivers that will appear.

5-8_xp-2k_dd_ccc_wdm_enu_25203.exe the folder Run in Service\Drivers\VGA\RADEON9600_V5_8. If "Security Warning" appears click





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To be applied to:

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MyLab60

✓ MyLab70

✓ MyLab70 XVision ✓ MyLab70 XVG RUN. Accept the default installation folder, accept the License Agreement and choose Express. Reboot the system and if "ATI Registration Choice" window

appears choose Never remind me and click OK

• If the Adapter Type is "RADEON X1550"

- Go in "Control Panel → Display → Settings → Advanced → Adapter". Open Properties → Driver, press button Update Driver..., select the option No, not this time → NEXT → select the option Install from a list or specific location → NEXT → select the option Include this location in the search → BROWSE, select the SW Pack directory service\DRIVERS\VGA\ATI_8.493_05122008 and confirm.
- 2. Wait the end of installation, press **Finish** and reboot
- At restart, start executable agp-hotfix_xp32_63478.exe in the SW Pack directory service\DRIVERS\VGA\ATI_8.493_05122008\ HotFix AGP.
 NB: the language of this installation depends on regional settings set on the

NB: the language of this installation depends on regional settings set on the equipment

Accept the default installation folder, accept the License Agreement, choose **Custom** installation and confirm, remove option **Catalyst Control Center**, select option **ATI Display Driver** and confirm. Press **Continue Anyway** when requested. Wait the end of installation and then reboot the system.

For all the models of VGA board, after the SW installation it's necessary to check the monitor resolution and frequency.

Open Control Panel \rightarrow Display \rightarrow Settings. Screen resolution for the primary display must be 1024 x 768 and Color quality 32 bit.

Screen resolution for the secondary display must be 1280 x 1024 and Color quality 32 bit. Press Advanced \rightarrow Monitor, Screen refresh rate must be 60 Hz.

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To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

1.5 <u>New PC</u>

A more powerful PC will substitute current models (Standard and Navigator).

Main characteristics:

• Intel Core2Duo 2.20 GHz

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- 2GB RAM
- 160GB Hard-disk
- New graphic card

Main advantages of new PC are in 3D/4D elaboration. Furthermore many operations on the archive become faster, as well as start-up time.

New PC mandatory requires Release 5.01

PC version is shown in MENU \rightarrow SYSTEM INFORMATION (new PC version is 2).

Codes for the new PC are:

- 9102572110 Standard PC
- 9102572610 PC with Virtual Navigator

Due to the introduction of this new PC a new dedicated recovery disk has been introduced. The code of the recovery DVD is 8610290002.

It's important to underline that the DVD code 8610290002 is only dedicated to the new PCs above listed; for the previous PC is still valid the DVD code 8610290001.

The recovery procedure will be described in a dedicated document.

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MyLab World One World One Language		DOCUMENT:	APPARATUS:	DATE:
		TECHNICAL NOTE	61XX	03/11/2008

To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

2.0 MODIFICATION ON PCI-BIRD BOARD

The PCI-Bird board (code 9103055000) is used in the system where Virtual Navigator is present. In order to make easier the insertion of the PCI-Bird board the mechanical support to the end of the board has been eliminated.





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To be applied to: ✓ MyLab60 ✓ MyLab70

MyLab70 XVision

MyLab70 XVG

It is suggested to remove the mechanical support at the first maintenance or in case of related problems.

3.0 MODIFICATION ON KEYBOARD CONTROL BOARD

It may happen that sometime the alphanumeric keyboard and the trackball doesn't work at all. To solve this problem it is suggested to remake the soldering on the P6 pins in the KYC board (9501106000) and clean the contacts.



4.0 TRACEABILITY

4.1 <u>MyLab SW release 5.01</u>

The traceability will be communicate in the next T.N.

4.2 TRACEABILITY NEW IMC code 9501092010

In the following units has been already introduced the new IMC. MyLab60/70X-Vision from SN 3751 plus SN 3720, 3729 till 3733, 3742 till 3749. MyLab70 from SN 259. MyLab70XVG from SN 5229.







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To be applied to: ✓ MyLab60 ✓ MyLab70 ✓ MyLab70 XVision ✓ MyLab70 XVG TECHNICAL NOTE N° 119

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To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

1.0 MyLab Release 5.02

1.1 <u>Release</u>

Code	Content
8610293025	MyLab60, MyLab70 and MyLab70 XVision, Release 5.02 Software Pack
8610294025	MyLab70 XVG, Release 5.02 Software Pack

To speed-up distribution all codes can be downloaded via internet from <u>ftp.esaote.com</u> site (user: lcommon, password BloodyMary).

Note

Be sure to burn a CD/DVD with the software release using a PC with installed an antivirus updated to the latest version.

1.2 <u>Software update release 5.02</u>

An instruction file named "Install_ver5.02" is contained inside the Software Pack DVD and being in RTF format it can be opened directly on MyLab units; please refer to this file to know the software update procedure.

For systems where there is the Virtual Navigator installed it's also necessary the upgrade of its SW. On the FTP site is available the SW pack "8620078005".

Note

It is mandatory to update Nero to the version 7.5 if it isn't already installed. For detailed instruction please refer to the paragraph "Updating Nero to version 7.5" contained in "Install_ver5.02" file. The new release of the Nero SW is enclosed in the 5.02 Software PACK DVD.





To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

1.3 Solved bugs

- M-View could not be saved on preset
- Body marks on Thyroid application were missing
- Generic measure options on thyroid application did not work
- Removed wrong presets (HIFU) on PA230 probe
- X-Strain: error when pressing Action key while reviewing graphs
- Corrected Wall Filter in CW Doppler with PA023 (MyLab60-70-70XV)
- Improved consistency of Fetal Trend in OB report
- Possible crash at probe changing starting from B+CFM to TRT33 probe

1.4 <u>New printer</u>

The following new printer model has been introduced:

Part number	Description
9730100880	NETWORK COLOR LASER PRINTER SAMSUNG CLP-310N

Printer drivers and installation sheet can be downloaded from ftp.esaote.com, user drvdownload, password DriverS (note the system is case sensitive) or from the Service Web (ultrasound/service/documentations/printers for MyLab Family).

2.0 MODIFICATION ON DIP BOARD

The following modification on the DIP board (code 9501093000) has been introduced in order to prevent hanging with system error message at the start-up:

- The resistor R105 (100Ω, 62mW, 1%) has been replaced by a new resistor (75Ω, 62mW, 1%).
- The resistor R404 (22 Ω , 62mW, 1%) has been replaced by a new resistor (0 Ω).

The modifications change the IC of the part to 4. The modification is suggested in case of specific problem.




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To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

3.0 MODIFICATION ON MEMBRANES

The membranes for the keyboard for MyLab60, MyLab70 and MyLab70 XVision (code 9102639500) have been modified in order to avoid possible cuts which created malfunctioning.

The new membranes have been introduced starting in the following units: MyLab60/70X-Vision from SN 3950 plus SN 3913, 3915, 3916, 3919, 3921, 3926 till 3931, 3934 till 3936, 3938 till 3947.

4.0 NEW ICC BOARD

In order to improve the CW in vascular application a new ICC board has been introduced. The new ICC board (9501091010) replace the old ICC board (9501091000). The new board is correctly working with all the software versions but the improvements in CW are available starting from the release 5.02.

The modifications change the IC of the part to 03.





To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

5.0 NEW SOFTWARE TOOLS FOR ITR BOARDS

Starting from the release 5.02 new software tools are available for ITR boards:

- Algorithm for the management of "Power Alarm" events.
- New software tool to selective exclusion of the ITR in transmission (for service only)

It's important to underline that the tools are available only for MyLab70XVG

5.1 <u>Algorithm for the management of "Power Alarm" events.</u>

The algorithm is introduced to avoid system error messages when the system detects a power absorption too high. Till now the system was stopped with a system error message in this case. The algorithm will try to solve the problem disconnecting the ITR responsible for this extra-absorption. In this way the unit will work with 11 ITRs. One ITR disabled doesn't affect the quality of ultrasound image. In case of more ITRs with overload problem or problem created by the SPR board the system will stop with system error message.

The algorithm is working automatically only in user mode (it is not possible to disable it); it is not activated accessing as administrator with the service key inserted in order to allow the trouble shooting.

In case of over-load the algorithm starts working and will appear the message "CALIBRATING" on the ultrasound image and the message "Warning: reduced ultrasound power! Please contact the Service department" in the tip area. The first message will remain only for the time the check is performed, the second will remain till the ultrasound scanner is switched off. If the overloading problem is occasional it is possible that the message won't appear again; if the overloading problem is regular the message will appear every time the system will be turned on until the problem will be solved.

All the algorithm activities are recoded in the log file.

Note: in case of spikes in the image the algorithm may identify them as an overload and so show the message described before and create a report as for the overload. Will be necessary to perform all the checks described in the next paragraph 5.2, condition where the algorithm is disabled.



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To be applied to:	✓ MyLab60	√ MyL	.ab70
	✓ MyLab70 XVision	√ MyL	ab70 XVG
AtEC.cpp330ERROR:COnAlarmPowerMP(): power alarm!!! DAlarmCounter=1Power=121709Lim Sup Power=24000Lim Inf Power=1707Vat=71300	 etails:		Power Alarm Registration
11:24:33.828 ITR Mask Status Vv 11:24:33.828 11111111111 2 11:24:33.906 ITR Mask Status Vv 11:24:33.906 ITR Mask Status Vv 11:24:33.906 0000000000 0 11:24:34.265 ITR Mask Status Vv 11:24:34.265 ITR Mask Status Vv 11:24:34.265 ITR Mask Status Vv 11:24:34.625 ITR Mask Status Vv 11:24:34.625 10111111111 2 11:24:34.625 ITR Mask Status Vv 11:24:34.625 ITR Mask Status Vv 11:24:34.625 ITR Mask Status Vv 11:24:34.625 ITR Mask Status Vv	vr[V] Vrd[V] Ts[ms] lq[mA] lqmin lq 81 7 305 2274 351 vr[V] Vrd[V] Ts[ms] lq[mA] lqmin lq 81 80 30 34 0 vr[V] Vrd[V] Ts[ms] lq[mA] lqmin lq 81 7 305 2192 322 vr[V] Vrd[V] Ts[ms] lq[mA] lqmin lq 81 7 305 2164 32 vr[V] Vrd[V] Ts[ms] lq[mA] lqmin lq	max IqPreAI IqLimSup 1 789 466 559 max IqPreAI IqLimSup 0 466 0 max IqPreAI IqLimSup 2 723 466 512 max IqPreAI IqLimSup 2 723 466 512 max IqPreAI IqLimSup	Re-starting attempt Whole Front-end disconnection
11:24:34.968 110111111111 2 11:24:35.328 ITR Mask Status Vv 11:24:35.328 111011111111 2 11:24:35.687 11:24:35.687 ITR Mask Status Vv 11:24:35.687 111101111111 2 11:24:35.687 11:24:35.687 11110111111 2 11:24:36.031 ITR Mask Status Vv 11:24:36.046 11110111111 2 11:24:36.125 ITR Mask Status Vv 11:24:36.125 ITR Mask Status Vv 11:24:36.125 111111011111 0	81 7 305 2195 322 wr[V] Vrd[V] Ts[ms] Iq[mA] Iqmin Iq 81 7 305 2142 322 wr[V] Vrd[V] Ts[ms] Iq[mA] Iqmin Iq 81 7 305 2170 322 wr[V] Vrd[V] Ts[ms] Iq[mA] Iqmin Iq 81 7 305 2170 322 wr[V] Vrd[V] Ts[ms] Iq[mA] Iqmin Iq 81 7 305 2170 322 wr[V] Vrd[V] Ts[ms] Iq[mA] Iqmin Iq 81 7 305 2179 322 wr[V] Vrd[V] Ts[ms] Iq[mA] Iqmin Iq 81 80 35 450 322	2 723 466 512 max IqPreAl IqLimSup 466 512	Not correctly working board searching. 12 rows maximum

Where:

ITR Mask represents the twelve ITR boards, from left to right is from ITR1 to ITR12. "1" means ITR enabled, "0" means ITR not enabled

Status shows the operating conditions of the power supply. "0" means current requested from the boards between the correct limits. "2" means overload.

Vwr and Vrd represent the set voltage and the read voltage (the one measured) respectively.

Ts means the time necessary to set the correct values of voltage and current. If it is too high (more than 300ms) means there is a problem.

Iq means current measured during the various checks.

Iqmin and Iqmax correct range of current values (minimum and maximum values).

The example before shows one case where the algorithm started:

- The first step is to detect the power consumption problem (power alarm registration)
- The system will check again the current and the voltage requested with all the ITRs enabled (re-starting attempt)



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To be applied to:

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MyLab60MyLab70 XVision

MyLab70

✓ MyLab70 XVG

- In case of overload the system will try to check the output voltage without ITRs enabled (whole front end disconnection). In case the voltage is now correct means ITR problem and the system will start to check the unit measuring the requested current and voltage disabling all the ITR one by one. If also in this case the voltage is not correct the system error will appear and probably the SPR has some problem.
- Phase of check of the ITRs (not correctly working board searching). The field below the voice ITR mask indicates which is the ITR disabled. For example if you find 011111111111 means that the ITR number one is disabled and all the other are enabled. In the example proposed it is possible to see that all the checked values returns in the range (status value 0) when the ITR number 7 is disabled (ITR mask 11111011111). In this case will be necessary to replace the ITR number 7. In case of more than one defective ITR for all the checks the values will be out of range and the status will remain always 2 (so hanging with system error message).

5.2 <u>New software tool to selective exclusion of the ITR in transmission</u>

In the Laboratory menu (accessible only in administrator way with the service USB key inserted) is now available the "Enable Itr" option.

Once selected the following window appears:







This feature allows to disable in reception (Rx chain) and/or transmission (Tx enable) the selected ITR boards.

Rx chain is available in MyLab60, MyLab70, MyLab70 XVision and MyLab70 XVG; it disable the reception of the selected board.

Note. If you select one board all the ITRs board till the one selected will be disabled in reception. For example if you select the ITR number 4, then the ITRs 1, 2, 3, 4 will be disabled. That means that these boards do not contribute to reconstruct the image but they are still used to transmit. To disable an ITR just click on the related checkbox.

Rx chain is useful to investigate problems on the image (lines, channels missing).



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Tx enable is available only in MyLab70 XVG; it disables the transmission of the selected board disconnecting from the high voltage line the board selected.

This feature is useful to check for overload (hanging with system error message) and image problems (white spikes).

How to proceed

The "Tx enable" option allows to disable/enable the transmission of one or more ITRs.

To disable the ITRs choose Select, then click on the checkbox to disable the related ITR. The software allows to disable one or more ITRs also not in sequence (for example you can disable the 1, 5 and 10).

Note that once Select is pressed the image become black waiting for the command from the user.

Selecting Activate you will see again the ultrasound image without the contribute in



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To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

transmission of the boards disabled.

The following picture shows the effect on the image when the central 8 ITRs are disabled in



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To be applied to: ✓ MyLab60

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✓ MyLab70

 \checkmark

MyLab70 XVision

MyLab70 XVG

The following picture shows the effect on the image when the first six ITRs are disabled in Rx.



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To be applied to: ✓ MyLab60 ✓ MyLab70

✓ MyLab70 XVision

MyLab70 XVG

The following picture shows the effect on the image when the first six ITRs are disabled in Rx and the central 8 ITRs are disabled in Tx..



In MyLab70 XVG it is possible to use at the same time both the features (Rx chain allows to disable consecutive boards).

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MyLab World	_(**	DOCUM	IENT:	APPAR	ATUS:	DATE:	
One World One Language		TECHN	ICAL NOTE	61XX		26/01/2009	
To be ap	plied to:	\checkmark	MyLab60 MyLab70 XVision		✓ MyL ✓ MyL	ab70 ab70 XVG	

6.0 BOARD INSERTER

A board inserter (code 9102954000) is now available for insert the right chassis boards.



To use the inserter:

- Insert the board inside the right slot taking care to fit partially the connector on the motherboard. Take care to leave the metallic fixing levers down before inserting the boards.
- Insert the tool in the upper and lower guides as shown in the pictures with the plastic part of the tool touching the plastic levers of the board.





- Push both levers in the direction of the machine in order insert the board.
- Remove the tools and close all the metallic fixing pins.

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To be applied to: ✓ MyLab60 ✓ MyLab70 ✓ MyLab70 XVision ✓ MyLab70 XVG TECHNICAL NOTE N° 121

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2.0Modification on 6150 Keyboard Display	3
3.0Modification on ITR board	<u>3</u>
4.0Modification on DEP board	<u>4</u>





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To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

1.0 New X-View license management

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Due to a modification to the license management the X-View license (code 9730610057) has been replaced by a new one (code 9730610094).

This new license is no more related to the Mac address of the motherboard but it is related to a new USB dongle key (code 9730670001).

In order to activate the new licence it is necessary that the USB key is inserted in the internal USB plug under the hard drive inside the PC unit in the position showed in the next picture.

Anyway the X-View licence (password) will be always necessary inserted as usually.



Thanks to this modification it is now possible to move the licence from one PC to another only moving the USB key and inserting the related password in the new unit.





To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

The code 9103045000 is a kit to upgrade systems without X-View licence. It includes:

- X-View licence
- USB key

Warning

For each spare PC group it is necessary to order the code 9103045000 if X-View licence is required, otherwise it will be shipped without X-View.

Traceability:

The USB key has been inserted starting the following s/n: MyLab 60/70 X-Vision: from s/n 4019 + s/n 4017 MyLab 70XVG: from s/n 5374

2.0 Modification on 6150 Keyboard Display

The following modification on 6150 Keyboard Display (code 9501211000) has been introduced:

The old small displays have been replaced by new ones due to the obsolescence of the part. The modifications change the IC of the part to 2. No modification is required from the field.

3.0 Modification on ITR board

The following modification on the ITR board (code 9501090000) has been introduced in order to prevent possible noise on CW:

- The condensers C130 and C131 (Elettr. 16V, 47uF, 20%, code 3500000124) have been replaced by new condensers (Tantalum, 47uF, 6.3V, code 3500000294.
- The resistor R195 (220 Ω , 62mW, 1%) is no more mounted.
- The new resistor R196 (220 Ω , 62mW, 1%) is added.

The modifications change the IC of the part to 2.



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To be applied to:✓MyLab60✓MyLab70✓MyLab70 XVision✓MyLab70 XVG

4.0 Modification on DEP board

The following modification on the DEP board (code 9501095000) has been introduced in order to prevent a possible error during board booting:

• The components U69, U70, U71, U72, U162, U163, U164, U165 are no more mounted.

The modifications change the IC of the part to 3.

No modification is necessary on the field.





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To be applied to: ✓ MyLab60 ✓ MyLab70 ✓ MyLab70 XVision ✓ MyLab70 XVG TECHNICAL NOTE N° 122

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To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

1.0 MyLab Release 6.01

1.1 <u>Release</u>

CodeContent8610293028MyLab60, MyLab70 and MyLab70 XVision, Release 6.01 Software Pack8610294028MyLab70 XVG, Release 6.01 Software Pack

To speed-up distribution all codes can be downloaded via internet from <u>ftp.esaote.com</u> site (user: lcommon, password BloodyMary).

Note

Be sure to burn a CD/DVD with the software release using a PC with installed an antivirus updated to the latest version.

1.2 <u>Software update release 6.01</u>

An instruction file named "Install_ver6.01" is contained inside the Software Pack DVD and being in RTF format it can be opened directly on MyLab units; please refer to this file to know the software update procedure.

For systems where there is the Virtual Navigator installed it's also necessary the upgrade of its SW. On the FTP site is available the SW pack "8620078007".

Note

It is mandatory to update Nero to the version 7.5 if it isn't already installed. For detailed instruction please refer to the paragraph "Updating Nero to version 7.5" contained in "Install_ver5.03" file. The new release of the Nero SW is enclosed in the 5.03 Software PACK DVD.





To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

1.3 <u>New printers</u>

The following new printer models have been introduced:

Part number	Description
9730100880	NETWORK COLOR LASER PRINTER SAMSUNG CLP-310N
9730100900	USB COLOR THERMAL PRINTER MITSUBISHI CP30DW
9730100910	USB B&W LASER PRINTER HP 2055d
9730100920	USB B&W THERMAL PRINTER MITSUBISHI P95DW
9730100950	NETWORK COLOR LASER PRINTER HP CP3525n

2.0 Modification on Monitor

The LCD 19" monitor EIZO CG19 will be replaced by a new LCD model EIZO EA700 for obsolescence reason. When the new monitor will be introduced a specific Technical Note will be released, however be informed that from the 6.01 the system menu already lists the new monitor model.

The Esaote code will remain the same for both the models (9103019XXX).

Once the model has been defined, select the correct monitor type in the service menu of your unit.

Open Menu \rightarrow Service \rightarrow Settings \rightarrow Monitor and select:

- XCRT when the monitor is the CRT LG 17'' (cod. 9102854000)
- XVISION when the monitor is the LCD EIZO 19'' ColorEdge CG19 (cod. 9103019000)
- XVISION W when the monitor is the LCD EIZO 21'' ColorEdge CG210 (cod. 9103021000)
- EA700-F (not used, do not select it)
- EA700-F SAT when the monitor is the LCD EIZO 19'' EA700-F (cod. 9103019000)



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To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

3.0 Modification on printer management

Starting from Release 6.01 the management of printers drivers has been modified. Now printers drivers and installation instructions are included in a dedicated CD code 8610292000_rev.B. An ISO image of the disk is downloadable from the protected site csa.etosea.com (the path is: International Activities \rightarrow Imaging – Ultrasound \rightarrow Service \rightarrow Documentations \rightarrow Printers for MyLab Family \rightarrow Software \rightarrow Additional Drivers CD – 8610292000B).

Note

Be sure to burn a CD with the printers drivers using a PC with installed an antivirus updated to the latest version.



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To be applied to:	\checkmark	MyLab60	\checkmark	MyLab70
	\checkmark	MyLab70 XVision	\checkmark	MyLab70 XVG

4.0 How to get the X-View license

In order to get the X-View license follow this procedure:

- 1. Start the unit as administrator with the service key. Do not start the MyLab sw
- 2. Insert the DVD 8610293028 or the 8610294028 (SW release 6.01) in the drive
- 3. Go in "Service\Xviewtools" and run the program "CVLicense.exe"



4. Will appear the following icon where you can read directly the license

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- 5. Selecting the option "Export license file" you will create a text file with the license (file Savedlicenses, that you can open as a text file)
- 6. You can save it for example using one USB pendrive

5





To be applied to: MyLab60 ✓

- ✓ MyLab70 XVision
- ✓ MyLab70
- ✓ MyLab70 XVG

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With the option "Import license file" you can import the license file and automatically load it on the unit.

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The two options are useful before and after a recovery.