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May 2004

Coronis® 3MP

Installation & User Manual

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CONTENTS

Introduction 7

Introduction 9
Contents of the package 9
Other relevant documents 9
Important installation considerations 9
Preparations before installation 9
Operating system requirements 9
Coronis installation overview 9

Imaging board installation 11

3MP2FH Product Overview 13
Features of the BarcoMed 3MP2FH 13
Minimum System Requirements 13
Supported Resolutions For Each Head of the 3MP2FH 13
System Configuration Guidelines 14

Planning your 3MP2FH, 2MP2FH or 1MP2FH Installation 15
Important installation considerations 15
Preparations before installation 15
Operating system requirements 15
BarcoMed installation overview 15

Hardware Installation 17
Familiarizing Yourself With the 3MP2FH, 2MP2FH or 1MP2FH 17
Switch Locations 17
Using the VGA Capabilities of the BarcoMed 3MP2FH, 2MP2FH or 1MP2FH 18
Examples of PCI Slots 18
Installing the BarcoMed 3MP2FH, 2MP2FH or 1MP2FH Display Controller 19
Running Multiple BarcoMed 3MP2FH, 2MP2FH or 1MP2FH Display Controllers in a Single Host 20

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Display installation 21

Overview 24
Introduction 24
Package contents 25
Controls and connectors 25

Installation 27
Precautions 27
Before installing the display 27
Portrait or landscape position 28
Connecting the signals 28
To connect the video & sync signals: 28
To connect the power: 29
Routing the signal cables 29
Tilt and swivel positioning 30
Starting up 30

Operation 31
Switching to stand-by position 31
Controlling the display 31
Navigating through the menus 31
Saving changes 32
Setting the Luminance value 32
Settings 33
Getting information 33

Advanced functions 34
About this chapter 34
Advanced functions in the Luminance menu 35
Advanced functions in the Settings menu 35
Advanced functions in the Information menu 36
Advanced functions in the Adjustments menu 38

Maintenance 39

Troubleshooting 40

Technical specifications 41

Barcomed software driver installation 43

Software Installation 45
Overview 45
Software 45
BarcoMed Software Installation Wizard 45

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Software Installation 47
Installing the BarcoMed 3MP2FH, 2MP2FH or 1MP2FH Windows NT 4.0 Software 47
Using the BarcoMed Product Installation Wizard 47
Driver Installation 49
BARCO DPMS Screen Saver Installation 50
CORONIS Rotation Service Installation 52
Setting the Resolution of Your CORONIS Display Panel 53
Reinstalling the BarcoMed Driver 55
Installing the BarcoMed 3MP2FH, 2MP2FH or 1MP2FH Windows 2000 or Windows XP Software 56
Using the BarcoMed Product Installation Wizard 56
Driver Installation 58
BARCO DPMS Screen Saver Installation 63
CORONIS Rotation Service Installation 64
Configuring the Windows Desktop and Setting the Resolution of your CORONIS Display 65
Configuring the Windows 2000 or Windows XP desktop 65
Setting the Resolution of Your CORONIS Display Panel 65
Enabling or Disabling DualView 67

BarcoMed Driver Tab 69
Introduction 69
Accessing the BarcoMed Driver Tab 69
Status 70
Graphics Board 70
Driver Version 70
Resolution 70
Palette Mode 70
Color to Gray Compatibility 70
UserModifiable Color Palette 71
Static Gray Palette including standard system colors 71
Static Gray Palette with NO system colors 72
Drawing Modes 73
Enable DirectDraw 73
Enable Dithering 73
Monitor Configuration 73
Languages supported 74

BarcoMed Hardware Tab 75
Introduction 75
Using The BarcoMed Hardware Tab 77
Device 77
PCI Information 78
Firmware Information 78
Utilities 78

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Barco Display Tab 81
Introduction 81
Using The BARCO Display Tab 82
Displays 82
Properties 83
BarcoMFD library 83
Coronis Display Properties 83

Barco DPMS Screen Saver Overview 85
Introduction 85
BARCO DPMS Screen Saver Options 86
Current Scheme 86
Save As 86
Delete 86
Work Schedule 86
Begin Work Day 86
End Work Day 86
Screen Saver During Work Day 87
Available Savers 87
Settings 87
DPMS Settings After Work Day 87
Amount of Time in each DPMS State 87
Monitor Settings 88
Use As Logon Screen Saver 88
Getting started with the BARCO DPMS Screen Saver 88
Using the BARCO DPMS Screen Saver 89
Installing or Reinstalling BARCO DPMS 93
Uninstalling BARCO DPMS 93

CORONIS Rotation Service 95
Overview 95
Installation or Reinstallation 96
Removal of CORONIS Rotation Service 96

MediCal software installation and usage 97

MediCal software installation 99

Optical sensor connection 99

Using MediCal 99

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INTRODUCTION

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INTRODUCTION

BARCO Coronis® is a total display solution for medical applications. Coronis 3MP2FH can be a single-head or multi-head system. Coronis comes with everything you need to set-up a complete viewing system, from cables to displays.

Contents of the package

Please refer to the packing list on the outside of the Coronis box.

Please contact BARCO if the content of the package does not correspond to the list.

Other relevant documents

- MediCal Pro Installation and User Manual

Important installation considerations

Preparations before installation

1 Make sure all equipment is switched off.

2 In case you use a PCI extension box, please install the box following the guidelines in its Installation or User's guide.

Operating system requirements

You must have **Windows 2000** or **Windows NT 4** with at least **Service Pack 3** installed on the PC.

Coronis installation overview

To install the Coronis system completely, you have to follow these steps:

1 Install the imaging board(s) in the PC

2 Install and connect the displays to the PC

3 Install the BarcoMed driver software

4 Install the MediCal software

5 Use MediCal

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IMAGING BOARD INSTALLATION

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3MP2FH PRODUCT OVERVIEW

The BarcoMed 3MP2FH Graphics Controller delivers a quality 2048x1536 pixel image with 1024 simultaneous shades of gray for medical imaging applications.

Features of the BarcoMed 3MP2FH

- Dual Head Configuration
- 2048 x1536 resolution at 60 Hz
- 10 bit performance on LCD
- 32MB Video Memory
- Portrait or Landscape Mode
- 1024 Simultaneous shades of gray
- Hardware cursor
- Single slot PCI card
- Control Panel supports the English (U.S.), Dutch, German, Korean, Japanese, Simplified Chinese and Traditional Chinese languages
- Display properties control panel to dynamically change display settings

Minimum System Requirements

- PCI slot with no obstructions
- Pentium II 266 MHz with 128 MB RAM (Pentium 800MHz with 256 MB RAM for cineloops)
- PCI 2.1 and/or 2.2 Compliant
- Windows NT 4.0 Service Pack 4 and above, Windows 2000 Service Pack 1 and above or Windows XP
- Displays VGA boot messages on CORONIS displays.

Supported Resolutions For Each Head of the 3MP2FH

- 2048 x 1536 @ 60 HZ (primary)
- 1536 x 2048 @ 59 Hz

The following resolution is also available when the OS is booted in VGA mode.

- 640x480 @ Default Refresh Rate, 16 colors

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System Configuration Guidelines

Because of the low power consumption and low heat generation of the 3MP2FH, multiple boards may be installed in adjacent PCI slots or adjacent to other PCI boards. Additionally there should be no need to modify either the PC's power supply and/or cooling system.

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PLANNING YOUR 3MP2FH, 2MP2FH OR 1MP2FH INSTALLATION

Important installation considerations

Preparations before installation

1 Make certain all equipment is switched off.

2 In case you use a PCI expansion chassis, please install it following the guidelines in its User's Guide.

3 Familiarize yourself with the 3MP2FH, 2MP2FH or 1MP2FH Display Controller and the cables used to connect it to the display panel.

4 Read through this guide from beginning to end.

Operating system requirements

You must have **Windows NT 4** with at least **Service Pack 4, Windows 2000** with at least **Service Pack 1** or **Windows XP** installed on the PC.

BarcoMed installation overview

To install the BarcoMed Display Controller(s) in your system, you have to follow these steps:

1 Install the imaging board(s) in the PC

2 Install and connect the displays to the imaging board(s)

3 Install the BarcoMed driver software

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HARDWARE INSTALLATION

Notice: Wear a protective ESD strap during installation or handling of the display controller. Electrostatic charges can damage the display controller.

Familiarizing Yourself With the 3MP2FH, 2MP2FH or 1MP2FH

Prior to installing your 3MP2FH, 2MP2FH or 1MP2FH display controller(s) in your PC please take a few minutes to familiarize yourself with both the display controller and the PCI slots in your computer.

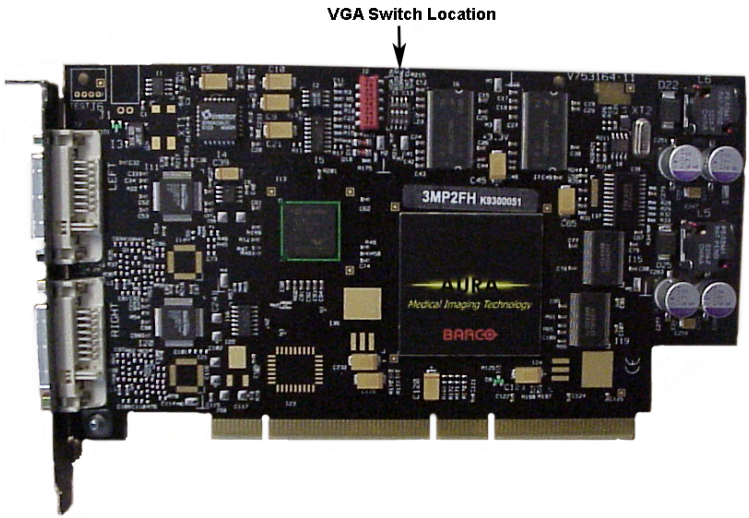


Figure 1: The 3MP2FH, 2MP2FH or 1MP2FH

Switch Locations

There are four switches located at S1 on the 3MP2FH, 2MP2FH or 1MP2FH. The following table shows their locations and briefly describes their functions and default states.

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Switch	Function
VGA EN	Enables VGA on the Primary Head (default is ON).
BIOS EN	Allows the System BIOS to read the VIDEO BIOS (default is ON).
NORMAL	Controls Board State (default is ON).
INT CLK	Internal Clock (default is ON). The switches are in the ON position when the white slider switch is positioned towards the top of the board.

Using the VGA Capabilities of the BarcoMed 3MP2FH, 2MP2FH or 1MP2FH

Prior to installing the BarcoMed 3MP2FH, 2MP2FH or 1MP2FH, decide if you are going to use its on-board VGA capabilities.

If you are, check the setting of the VGA switches on the graphics board. (See S1- VGA switches, figure 1.) By default, VGA should be enabled.

If you decide to use a separate VGA monitor as your boot monitor, you must disable the on-board VGA capabilities of the BarcoMed 3MP2FH, 2MP2FH or 1MP2FH by setting switches #1 and #2 on the 3MP2FH, 2MP2FH or 1MP2FH display controller to the “off” position. The two switches are labeled “VGA EN” and “BIOS EN” respectively. Use a pen or small flat bladed screwdriver and move the white slider switch toward the bottom of the switch (towards the numbers).

NOTE: To use multiple 3MP2FH, 2MP2FH or 1MP2FHs in a single host with VGA enabled, you need to enable VGA on only ONE of the 3MP2FH, 2MP2FH or 1MP2FHs and disable VGA on ALL other BarcoMed display controllers.

Examples of PCI Slots

Although the BarcoMed 3MP2FH, 2MP2FH or 1MP2FH has a 64 bit PCI connector, it functions as a 32 bit board. It may be installed in either a 32 bit or 64 bit slot with no loss of functionality. Figure 2 illustrates the types of slots so that you can correctly identify which one to use for the 3MP2FH, 2MP2FH or 1MP2FH.

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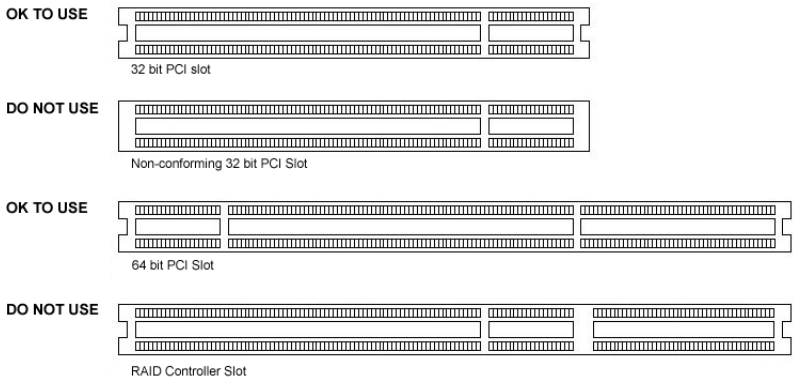


Figure 2: PCI and RAID Controller Slots

Installing the BarcoMed 3MP2FH, 2MP2FH or 1MP2FH Display Controller

Install the 3MP2FH, 2MP2FH or 1MP2FH into your computer following these steps:

1. Turn off the power to your computer and disconnect the power cord.
2. Remove the chassis cover according to the manufacturer's instructions. Be sure to observe safety warnings.
3. If you have decided to use the on-board VGA capabilities of the 3MP2FH, 2MP2FH or 1MP2FH (see Using the VGA capabilities of the BarcoMed 3MP2FH, 2MP2FH or 1MP2FH), you **must now remove** any VGA cards that are currently installed in the computer.
4. Install the 3MP2FH, 2MP2FH or 1MP2FH Display Controller into a free PCI slot, either 32 bit or 64 bit (see figure 2, for examples of slots). Be sure that the display controller is seated firmly in the slot.
5. Secure the card to the chassis with the PC's I/O panel mounting screw, and replace the chassis cover.
6. Connect the primary display (left most display in a linear configuration, top most in a vertical configuration) to the uppermost connector on the 3MP2FH, 2MP2FH or 1MP2FH (the output farthest from the motherboard – "**VID 1**" in figure 3) using the provided DVI cable. For a dual-headed 3MP2FH, 2MP2FH or

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1MP2FH setup, connect the secondary display to the other connector on the display controller.

7. Reconnect the power cord, turn on the power, and boot the system as usual.

Running Multiple BarcoMed 3MP2FH, 2MP2FH or 1MP2FH Display Controllers in a Single Host

The physical order of the displays may vary when you are running multiple BarcoMed 3MP2FH, 2MP2FH or 1MP2FH display controllers. This is due to the PC's PCI bus control in the system BIOS, and not the BarcoMed display controller. It may become necessary, depending on how your PC's BIOS configures the PCI bus, to switch your DVI display connections to achieve a linear desktop configuration.



Figure 3: The Video Outputs.

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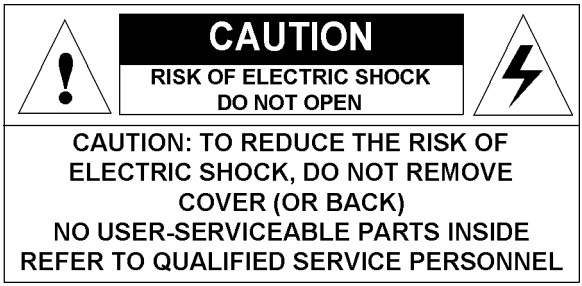
DISPLAY INSTALLATION

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SAFETY INSTRUCTIONS



• Read the safety and operating instructions before operating the apparatus.
• Retain safety and operating instructions for future reference.
• Adhere to all warnings on the apparatus and in the operating instructions manual.
• Follow all instructions for operation and use.

•This apparatus conforms to: CE, IEC 60950, UL 60950, CAN/CSA C22.2 No. 60950-00 (c-UL)

• FCC notice
This equipment has been tested and found to comply with the limits of a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Power connection

• **Warning:** This apparatus must be earthed!
• Power requirements: The apparatus must be powered using the 12 VDC power supply that is supplied with the apparatus.
The 12 VDC power supply must be powered by the AC mains voltage.
• Do not overload wall outlets and extension cords as this may result in fire or electric shock.
• Mains lead protection (U.S.: Power cord): Supply cords should be routed so that they are not likely to be walked upon or pinched by items placed upon or against them, paying particular attention to cords at plugs and receptacles.

Water and moisture
• Never expose the apparatus to rain or moisture.
• Never use the apparatus near water - e.g. near a bathtub, washbasin, swimming pool, kitchen sink, laundry tub or in a wet basement.

Ventilation
• Do not cover or block the ventilation openings in the cover of the set. When installing the apparatus in a cupboard or another closed location, heed the necessary space between the set and the sides of the cupboard.

Installation
• Place the apparatus on a flat, solid and stable surface that can bear the weight of at least 3 displays. If you use an unstable cart or stand, the set may fall, causing serious injury to a child or adult, and serious damage to the equipment.

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OVERVIEW

Introduction

The MFGD 3420, BARCO's 21" 3 megapixel greyscale LCD display, guarantees perfect image quality in medical imaging applications.

The display combines a TFT (thin film transistor) liquid crystal display panel structure and a built-in backlight with inverter for a better picture quality. It is designed to meet the users' needs for performance, consistency, and outstanding image quality through a streamlined development process.

The display can be used in portrait or landscape version, simply by turning the panel. The tilt & swivel foot allows ideal positioning of the panel, in height and viewing angle.

The image brightness can be adjusted by means of a control wheel on the display. Other image parameters can be adjusted by means of external software, like MediCal® Pro.

I-Guard

I-GUARD® is Barco's patent-pending, built-in calibration device, continuously maintaining image quality. With I-GUARD®, QA checks no longer need to disturb normal radiology activities, as they can be performed while applications are running.

I-GUARD® allows radiologists or QA administrators to calibrate their viewing stations or adjust the panel's curve to DICOM standards without administrator intervention.

MediCal Pro

In combination with Barco's MediCal ® Pro management and calibration software package, Coronis offers a truly intervention-free display system, making it possible to perform QA checks from one central server at any time, thereby reducing lifecycle cost.

Multi-scan capabilities

The optimum and recommended resolution is **2048 x 1536** or **1536 x 2048 at 60 Hz**.

The MFGD 3420 display will also display most of the computer boot modes.

BARCO's BarcoMed 3MP2FH imaging board is the best choice to drive the MFGD 3420 display.

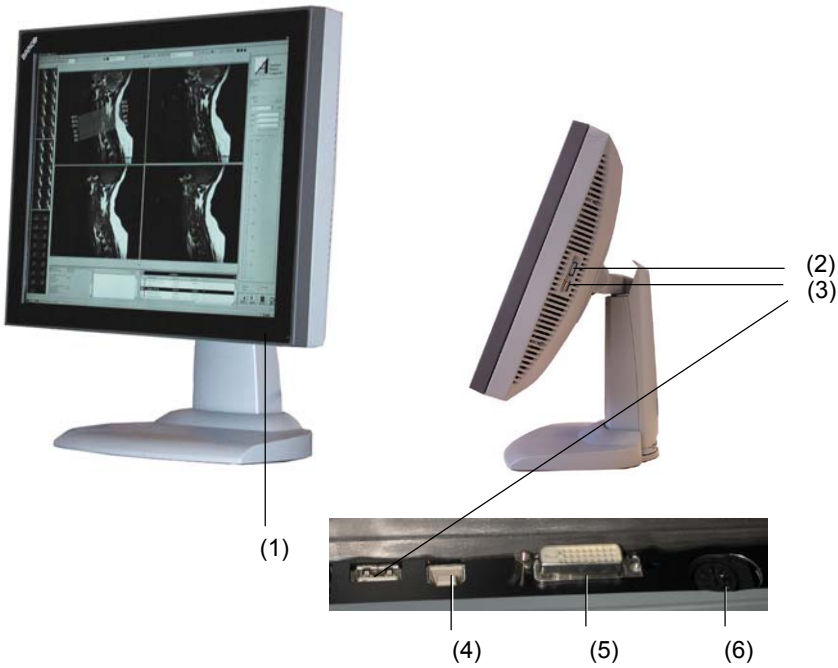
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Package contents

The package should include the following items, please check. If some of the items are missing, please contact the reseller you have purchased the unit from.

- The MFGD 3420 display
- 12V DC power supply
- European power cord
- American power cord
- Chinese power cord
- Video cable
- This user manual

Controls and connectors



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(1) Power LED

- The LED is off when the display is off.
- The LED is green when the display is on.
  Note: This function can be switched off by software.
- The LED is blinking green when the display is in Suspend power-saving mode.
- The LED is orange when the display is in Stand-by power-saving mode.

(2) Control wheel for stand-by switching and luminance control

(3) USB-downstream connector

(4) USB-upstream connector

(5) DVI (video and data) input

(6) 12V DC power input

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INSTALLATION

Precautions

- Keep your original packaging. It is designed for this display and is the ideal protection during transport.
- Avoid reflections in the flat panel to reduce eye strain.
- Place the display on a strong and stable table or desk.
- Keep the display away from heat sources and provide enough ventilation in case it is built in a rack or console.
- Make sure the computer is switched off before connecting the signals.
- Do not block or cover the openings in the external power supply block. Also, do not turn the power supply upside down or at its side. Doing so would cause overheating of the power supply.

Before installing the display

Important:

In the factory, the height-positioning system in the display foot is blocked with a strap to prevent damage during transportation.



Before installing the display, you must remove this strap.

To remove the strap:

1 Position the display with its rear side facing you.

2 If the foot cover is mounted on the foot, lift up the 2 clips of the foot cover to release the cover from the foot.

3 Pull the lower side of the cover towards you and simultaneously slide the cover downward.

4 Pull the red strap out of the fixation holes in the foot.

You can better leave the cover off the foot while connecting the signal cables to the display.

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Portrait or landscape position

You can change the orientation of the panel at any time, but it is more convenient to select landscape or portrait orientation before connecting the cables.

To change the panel orientation:

1 Stand at the front side of the panel and take the panel at both sides.



2 **Very important:** Tilt the panel before changing the orientation.
Should you change the panel orientation without tilting it first, you might irreversibly damage the tilt & swivel mechanism.

3 To change from portrait to landscape, turn the panel **counterclockwise** while lifting it up slightly.
To change from landscape to portrait, turn **clockwise**.

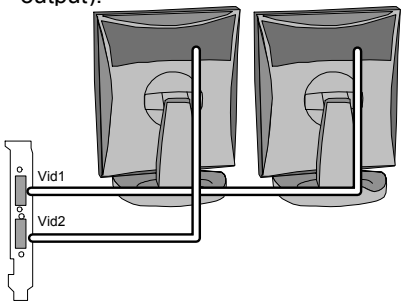
Connecting the signals

To get access to the connectors, open the cover of the connector compartment by pulling down the 2 clips of the cover.

To connect the video & sync signals:

1 Connect one end of the video cable to the DVI input (5) of the display.

2 Connect the other end of the video cable to the video output of your video source (Computer graphics board with digital video output).



Example of video connection in a Coronis dual head configuration

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3 Route the cable so that it enters the connector compartment at the place where the cover is bulged.

To connect the power:

1 Connect the output of the 12V DC power supply to the DC input (6) of the display.
2 Connect one end of the proper power cable to the AC input of the 12V DC power supply.
3 Connect the other end of the power cord to a grounded power outlet.

Routing the signal cables

After connecting all cables, fix them in the cable tie at the rear of the connector compartment. You can also bind the cables together by means of the 2 velcro strips included in the package.

After fixing the cables, put the connector compartment cover back in place. Pay attention that the signal cables are positioned under the bulge in the cover.

Next, fix the cables in the plastic clamps on the foot. At last, put the foot cover back in place.

To put the foot cover in place:

1 Push the upper side of the cover onto the foot, so that the hooks on the cover are positioned right under the holes in the foot.



Push the upper side of the cover onto the foot



Signal cables routed under foot cover and bound by velcro strips

2 Slide the cover upward while moving the lower side of the cover towards the foot.
3 Press the cover to the foot so that both clips make a clicking sound.

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Tilt and swivel positioning

Adjust the position of the panel for best viewing conditions.

The display foot allows adjusting the panel height, horizontal viewing angle and vertical viewing angle.





Starting up

Proceed as follows:

1 Switch on the computer.

2 If necessary, select a suitable resolution in the computer operating system. You will have to select a resolution that corresponds to the panel orientation (landscape or portrait).

Please refer to the possible resolutions in the Technical specifications.

Note: The recommended resolution for best image quality is **2048 x 1536** or **1536 x 2048**.

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OPERATION

Switching to stand-by position

When the display is on and no on-screen menus are visible, press the control wheel (2) shortly to switch the display in stand-by.

When the display is in stand-by, press the control wheel to switch it back on.

Controlling the display

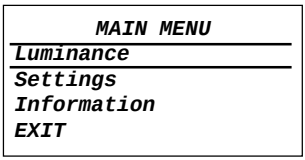
The control wheel (2) at the bottom (portrait orientation) or at the side (landscape orientation) allows you to perform controls.

The control wheel is a rotation - click system. It provides the following functions:

- Short click: Enter menus, confirm selections, and toggle between different options
- Rotate: Enter the OSD menus, browse through menus, increase or decrease adjustment values

Navigating through the menus

- The menu system has a hierarchical structure, with several levels. To display the on-screen menus, turn the wheel (2). The Main Menu appears. This is the top level of the menu system.



- To browse or scroll through the menus on the current level, turn the wheel clockwise or counter-clockwise.
- To enter into a menu or move to a lower level of the menu structure, turn the control wheel to select the desired menu. Next, click the wheel shortly.
- To exit from a menu or move to a higher level of the menu structure, turn the control wheel to select **EXIT**. Next, click the control wheel shortly.
  If you do this when you are in the Main Menu, you exit the menu system.

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- Some adjustments can be made by changing an adjustment value. To change an adjustment value:

- Turn the control wheel to select the adjustment.
- Click the wheel shortly. A pointer appears next to the adjustment name.
- Turn the wheel to change the value.
- Click the wheel shortly to confirm the change. The pointer disappears again.

- Some adjustments can be made by selecting from a range of predefined settings. To change the selection:

- Turn the control wheel to select the adjustment.
- Click the wheel until the desired setting appears in the menu.

Saving changes

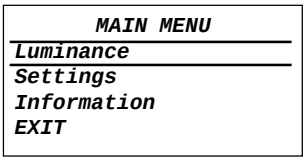
When you change a setting value, the change is automatically saved immediately.

Setting the Luminance value

With this function, the backlight value is stabilized by the I-Guard sensor. The value you enter is the target backlight luminance, expressed in Cd/m². This luminance value will be established by the I-Guard control circuit.

Proceed as follows:

1 In the main menu, turn the control wheel to select the Luminance menu.



2 Click the control wheel. The Luminance menu appears.
3 Turn the control wheel to select the Luminance function.
4 Click the control wheel. A pointer appears at the left of the menu.
5 Turn the control wheel to adjust the Luminance Target value.
6 Click the control wheel to confirm the adjustment.
7 Turn the control wheel to select Exit.
8 Click the control wheel to return to the main menu.

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Settings

To change the settings:

1 Turn the control wheel to select the setting you wish to change.

2 Click the control wheel to change the setting.

The Settings menu contains the following items:

DPMS ..... Allows to switch on/off the automatic power saving system (DPMS)

Power LED ..... This setting allows you to switch off the power LED. Note: The LED's orange DPMS state is not influenced by this setting. So, when the display goes into power-saving mode, the LED will turn orange, even if it was switched off by this setting.

User controls ..... This function allows you to disable the control wheel functions so that the on-screen display cannot be used after quitting the OSD menus.
To enable the control wheel functions again:
a) Do not use the wheel for at least 3 seconds
b) Turn the control wheel 1 click clockwise
c) Click the control wheel 2 times
d) Turn the control wheel 1 click counterclockwise
e) Select the Settings menu and switch Local controls on again.
Actions b, c, d have to be performed in a sequence that takes no longer than 3 seconds.

Getting information

The Information menu allows you to get a lot of information about the display and the connected signals.

Proceed as follows:

1 In the main menu, turn the control wheel to select Information.

2 Click the control wheel to enter the information menu.

The Information menu contains the following items:

Product: ..... The display type

Serial No: ..... Indicates the display serial number

SW version: ..... Displays the current internal software version

Display Lifetime: ..... Indicates the total time the display has been operating, including the time in stand-by

Backlight Lifetime: ... Indicates the total time the display has been operating, excluding the time in stand-by

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ADVANCED FUNCTIONS

About this chapter

Important

The functions described in this chapter are intended for trained service staff only!

Improper use of these functions may irreversibly damage the display. BARCO cannot be held responsible for the results or damage caused by improper use of these functions.

This chapter describes only the **Advanced** functions in the OSD menus. For a description of the other functions (standard functions), please refer to the previous chapter, **Operation** .

In this chapter, we assume the advanced user knows how to use the OSD system: How to browse through the menus, how to enter menus and sub-menus, how to select and change values.

These actions are described in the previous chapter.

About the Advanced functions

The advanced functions are extensions of the OSD menus. A standard user browsing through the OSD system sees only the standard functions. When logged in in advanced mode, the user sees the standard *and* advanced functions in the OSD menus.

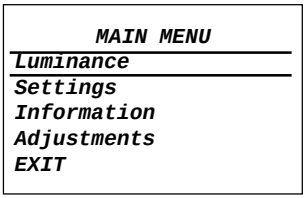
To log in as advanced user:

1 Enter the main menu.

2 Turn the control wheel to select the menu item EXIT.

3 Click and hold the control wheel for at least 6 seconds until the OSD main menu is refreshed on the screen.

You have now logged in as advanced user.



The Advanced main menu

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Advanced functions in the Luminance menu

The Luminance menu contains the following advanced function:

Manual Backlight ..... This function allows to manually control the backlight luminance. When you control the Manual Backlight function, the Luminance target function and I-Guard control are disabled.
Important: Disabling the I-Guard results in an uncalibrated and not stabilized backlight.
After switching the power off and on again, the Luminance target and I-Guard control are activated again. This is also the case when you control the Luminance function again.

Advanced functions in the Settings menu

The Settings menu contains the following advanced functions:

Panel position ..... Click to select the desired option:

- Auto: Select if the display will be used in both portrait and landscape orientation.
- Portrait: Select if the display is always used in portrait orientation.
- Landscape: Select if the display is always used in landscape orientation.

Auto Rotation ..... When switched on, the image will be rotated automatically when switching between portrait or landscape orientation.

DVI input ..... Click to switch between normal DVI signal, Dual10 DVI signal or automatic detection of the DVI format.

Stabilizer ..... Click to switch the backlight stabilizer on/off

Patch ..... Click to hide/display the I-Guard patch. When you hide the patch, the I-Guard will not function properly anymore

Burn-In Mode ..... When switched on, the display will generate a white image when the video cable is unplugged

Important: Disabling the I-Guard results in an uncontrolled image performance.

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Advanced functions in the Information menu

In Advanced mode, the Information menu contains the following additional submenus: Service, Firmware, Runtime, Measurements and Scan Measurements.

Service

The Service info menu contains the following items:

Display Name ..... The display type

Display Ser No ..... Indicates the display serial number

Display Stock No ..... Indicates the display order number

Panel Ser No ..... Indicates the flat panel serial number

Panel Prod Date ..... Indicates the flat panel production date

Firmware

The Firmware info menu contains the following items:

Boot Code Version ..... The version of the internal boot code

Run Code Version ..... The version of the internal run code

CPLD Code Version ..... The version of the internal CPLD code

Transpose Version ..... The version of the internal Transpose circuit code

Runtime

The Runtime info menu contains the following items:

Display lifetime ..... Indicates the total time the display has been under power

Backlight Lifetime .... Indicates the total time the display has been operating, excluding the time in stand-by (so, the total backlight lifetime)

Backlight Runtime ... Indicates the time the backlight has been on since the last time it was switched off. This counter is reset to 0 after 1092 minutes.

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Measurements

The Measurements info menu contains the following items:

Internal Temperature .... The temperature measured inside the display

Sensor Temperature .... The internal temperature measured on the I-Guard board

FAN speed ..... A value indicating the speed of the fans. Minimum speed is 0, maximum speed is 1000

Sensor Y value ..... The luminance measured by the I-Guard, expressed in nit (Cd/m²)

Sensor DAC value ..... The luminance measured by the I-Guard, expressed in DAC values

Scan Measurements

The Scan Measurements info menu contains the following items:

DVI Input: ..... The current DVI input format

Resolution: ..... The resolution of the current input signal

Clock Frequency: .... The current clock frequency

Hor.Total: ..... The total number of dots, horizontally, of the input signal

Hor.Active: ..... The number of active dots, horizontally, of the input signal

Hor.Blanking: ..... The horizontal blanking of the input signal

Hor.Front Porch: ..... The horizontal front porch of the input signal

Hor.Sync: ..... The horizontal sync length of the input signal

Hor.Back Porch: ..... The horizontal back porch of the input signal

Hor.Frequency: ..... The horizontal frequency of the input signal

Vert.Total: ..... The total number of lines, vertically, of the input signal

Vert.Active: ..... The number of active lines, vertically, of the input signal

Vert.Blanking: ..... The vertical blanking of the input signal

Vert.Front Porch: ..... The vertical front porch of the input signal

Vert.Sync: ..... The vertical sync length of the input signal

Vert.Back Porch: ..... The vertical back porch of the input signal

Vert.Frequency: ..... The vertical frequency of the input signal

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Advanced functions in the Adjustments menu

In Advanced mode, the main menu contains an additional menu, Adjustments. This menu contains the submenu Miscellaneous.

Miscellaneous Adjustments

The Miscellaneous menu contains the following items:

RS232 Address ..... Turn the control wheel to change the internal display address.

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MAINTENANCE

Panel

Take care not to damage or scratch the panel. Clean with a soft woolen or cotton towel. Use a watery solution or a mild commercial glass-cleaning product.

Cabinet

Do not use chemical cleaning products, benzene, toluene, xylene or other solvents. Clean with a soft cloth dampened with mild detergent and water. Repeat with water only and wipe dry with a dry cloth.

Removing dust from the rear of the glass panel

It may be possible that dust particles have entered the display and are stuck to the rear of the glass.

We recommend to let this cleaning procedure be done in a BARCO service center.

However, when really necessary, you can perform the cleaning on site if you can work in conditions that are as clean and dust-free as possible. This is to avoid more dust entering the display when opening it.

To remove the glass panel:



1 Switch off the display.
2 Tilt the panel.
3 Unscrew the 4 sunken screws at the rear, fixing the glass panel and bezel.
4 Remove the bezel with glass panel.

Cleaning instructions:

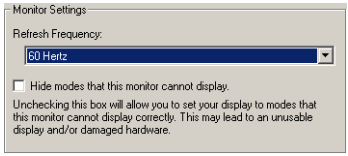
- Dust, fingerprints, grease etc. can be removed by using a soft damp cloth (a small amount of mild detergent can be used on the cloth, NOT solvent).
- Do not apply liquid directly to the LCD surface as excess liquid may cause damage to internal electronics.
- Take care not to touch the I-guard light sensor on the LCD panel.

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TROUBLESHOOTING

Windows does not show the desired display settings

Should you have problems selecting display settings for portrait oriented displays in the Windows Display Properties control panel, disable the option **Hide modes that this monitor cannot display** in the control panel (see below).



Information:

The display contains a special memory chip that contains information about the display's scanning capabilities. When Windows starts up, it reads the contents from this memory and presents a number of display settings in the Display Properties control panel, based on this information.

The memory of this display contains the information the display can handle scanning systems up to 120 Hz. That is why Windows will propose a display setting with a high refresh rate. **However, it is best to select a refresh rate of 60 Hz.**

The information that the display can be used in portrait mode, is also stored in the display memory. However, Windows does not recognize this and presents only default landscape modes if the option **Hide modes that this monitor cannot display** in the control panel is enabled.

Pixel Faults

Permanently dark or bright pixels can happen to TFT displays. 20 or less permanently dead pixels do not make out a good case for exchanging the unit.

Please contact our Customer Service Department if the number of pixel faults exceeds the above-mentioned figure.

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TECHNICAL SPECIFICATIONS

Picture panel
20.8-inch diagonal viewable screen TFT (thin film transistor) active matrix, greyscale liquid crystal display

Resolution
Native: 2048 x 1536
Other VESA resolutions possible, not scaled

Display area (H x V)
423.9 x 318 (mm)

Pixel Pitch
0.207 mm (H) x 0.207 mm (V)

Viewing angle (@ 10/1 contrast)
Vertical: 170º
Horizontal: 170º

Native color resolution
8 bits / sub-pixel

Signal system
DVI dual channel

Luminance
500 cd/m^2 (calibrated)
700 cd/m^2 (maximum)

Contrast ratio
600/1 (in dark environment)

Response time
25 ms (@ 25° C after 30 min warmup)

Controls
Push / turn control wheel for stand-by switching and brightness control

Input connectors
DVI dual channel

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Power source
Input for 12 VDC power supply unit: 90 ~ 264 VAC
Input for display: 12 VDC. (The supplied 12VDC power supply must be used)

Power consumption
80 watts (max.)

Safety standards
CE, IEC 60950, UL 60950, CAN/CSA C22.2 No. 60950-95-00 (c-UL)

Dimensions (W x H x D)
In perpendicular vertical position, highest position, tilt = 0°, swivel = 0°:
385 x 590 x 240 mm

Net weight
13 kg

Operating Temperature
0°C to 40°C

Storage Temperature
-20°C to 60°C

Humidity
(Relative, non condensing)
Operation: 8% - 80%
Storage: 5% - 95%

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BARCOMED SOFTWARE DRIVER INSTALLATION

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SOFTWARE INSTALLATION

Overview

The BarcoMed Software Installation section has been divided into two sections. One for Windows NT 4.0 and the other for Windows 2000 and Windows XP.

Software

In addition to the device drivers for your BarcoMed Display Controller(s), your BarcoMed Software CD also includes several additional tools. They are: the BarcoMed Driver Tab, the BarcoMed Hardware Tab, the BARCO DPMS Screen Saver and the CORONIS Rotation Service. The BarcoMed Driver Tab, the BarcoMed Hardware Tab and the BARCO Display Tab are automatically installed with BarcoMed Display Controller driver and become part of the Windows Display Control Panel. The BARCO DPMS (Display Power Management Signaling) Screen Saver and the CORONIS Rotation Service are optional tools which must be installed separately.

The BarcoMed Driver Tab helps you manage the special features of your BarcoMed Display Controller(s). The BarcoMed Hardware Tab gathers information about the BarcoMed Display Controller(s) and your system that is useful when diagnosing problems. The BarcoMed Hardware Tab can also be used to update the firmware on the AURA video chipset based BarcoMed Display Controller. The BARCO Display Tab is used for gathering information about the BarcoMed Flat Panel Display(s). The BARCO DPMS Screen Saver allows the user to set power and monitor saving features for medical monitors driven by BarcoMed Display Controller(s). At the end of the workday, the monitor will enter certain DPMS states as requested by the imaging board. The CORONIS Rotation Service detects changes in the physical orientation of the rotatable CORONIS flat-panel displays and changes the resolution of the display to match the physical orientation.

Special Note: The CORONIS Rotation Service requires the Portrait Accelerator (PA) Option in order to function. The PA is included with the CORONIS 3MP Flat Panel Displays and is available as an option for the CORONIS 1MP and 2MP Flat Panel Displays.

BarcoMed Software Installation Wizard

The BarcoMed Software Installation Wizard is a Graphical User Interface (GUI) designed to install the BarcoMed Display Controller Driver, the BARCO DPMS Screen Saver and the CORONIS Rotation

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Service in a single operation prior to rebooting. The user may also use the BarcoMed Software Installation Wizard to reinstall either the BarcoMed Display Controller Drivers or CORONIS Rotation Service and/or modify, repair or remove the BARCO DPMS Screen Saver from his system. The BarcoMed Display Controller Driver **must** be installed prior to installing either or both the BARCO DPMS Screen Saver or the CORONIS Rotation Service.

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SOFTWARE INSTALLATION

Installing the BarcoMed 3MP2FH, 2MP2FH or 1MP2FH Windows NT 4.0 Software

SPECIAL NOTE: Prior to installing the BarcoMed drivers and related software you MUST install the BarcoMed Display Controller(s), connect the CORONIS display panel(s) to the controller(s), and turn the CORONIS display panel(s) on. Refer to the Hardware Installation section of this manual for instructions on installing the BarcoMed Display Controller(s) and connecting them to the CORONIS display panel(s).

The following software installation instructions presume that Windows NT is already installed on your system. If you need to install or reinstall Windows NT on your system you must first remove the BarcoMed Display Controller(s) and use a 3rd party VGA card and VGA monitor during the Windows NT installation process.

Using the BarcoMed Product Installation Wizard

To install your BarcoMed 3MP2FH, 2MP2FH or 1MP2FH Windows Display Controller Driver, BARCO DPMS Screen Saver and CORONIS Rotation Service for the first time follow the steps below. If you are reinstalling the drivers or installing a new driver release over an existing driver release, skip step 1 below:

1. Install the BarcoMed Display Controller(s) into your machine. Please refer to the Hardware Installation section of this manual for more information.
2. Boot the machine, log in using an account with administrator privileges and follow these steps.
3. Insert your BarcoMed Software CD into your computer's CD drive. The "BarcoMed Software Product Installation Wizard" should start automatically. If it doesn't start within 1–2 minutes, browse the contents of your BarcoMed Software CD and double click on the file, **"Setup.exe"** to start the wizard.

   The BarcoMed Product Installation Wizard will begin by inspecting your system to make certain that all of the Windows components it needs are up to date. If they are, the BarcoMed Product Installation Wizard will display the BarcoMed Product Installation Wizard's welcome screen (figure 4 on the next page).

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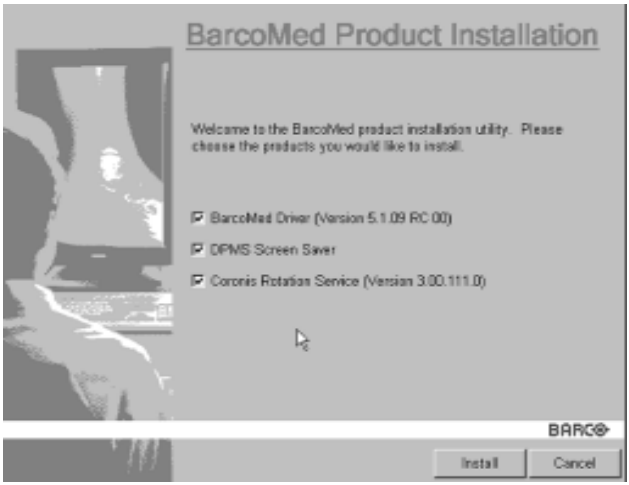


Figure 4

If it determines that the Microsoft Installer is either out of date or missing, it will display the screen shown in figure 5. Click **"OK"** to continue, the wizard will then install a newer version of the Microsoft Installer.

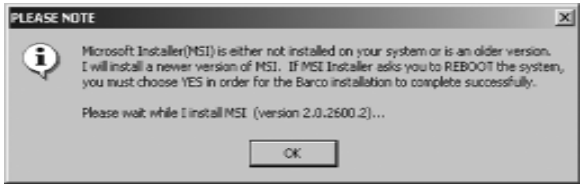


Figure 5

The BarcoMed Product Installation Wizard will advise you when it has successfully installed the new version of the Microsoft Installer. Click **"OK"**.

The Wizard may prompt you to restart your system. If it does, click **"Yes"** to restart your system now. When your system restarts, log in using an account with administrator privileges. The BarcoMed Product Installation Wizard will restart automatically.

If the BarcoMed Product Installation Wizard doesn't prompt you to restart your system, it will continue to the Welcome Screen.

4. By default all the software on the BarcoMed Software CD will be selected (figure 4 above). For the initial installation we recommend that you install all of the software. If you do not want to install a particular BarcoMed Software product, deselect it by **clearing** the

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checkbox next to it. When you have finished selecting the BarcoMed Software you wish to install, click **"Install"** on the Wizard's Welcome Screen to continue or **"Cancel"** to exit the wizard.

Driver Installation

5. Click **"Next"** on the Display Driver Wizard's Welcome Screen to continue or **"Cancel"** to exit the Display Driver Wizard and return to the Software Install Wizard.
6. The Device Selection Screen (figure 6 below) shows the devices supported by the driver on the CD. Under Windows NT the wizard does not detect the physical hardware installed in the computer. Since Windows NT supports only one type of video device at a time, you may choose only one type of device to install. After you have selected the device you want to install, click **"Next"**.

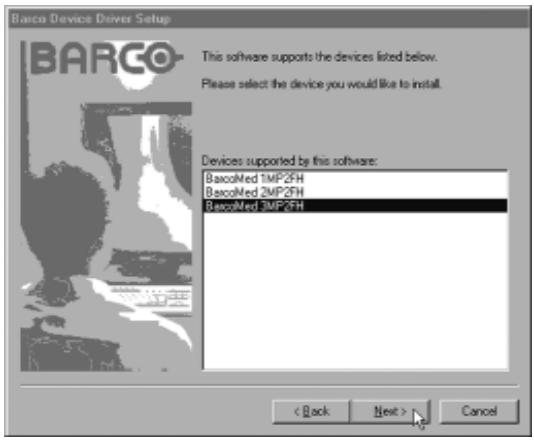


Figure 6

If you selected a device with an existing driver, the Wizard will warn you if the current driver is newer than the one you are installing (see figure 7 below).



Figure 7

If you want to change your selection, click **"OK"** to continue and then click **"Back"** on the next screen otherwise click **"OK"**.

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7. The Device Confirmation Screen lists the device that will be installed. If you want to change your selection, click **“Back”** and you will see the previous screen. To begin installation, click **“Next”**. If you want to end the installation without installing the driver, click **“Cancel”** and the Wizard will exit.

   Caution: Once you click **“Next”,** you cannot cancel the driver installation.

8. When the Driver Install Wizard tells you that it has successfully installed the selected driver, click **“Finish”**. The wizard will now begin installing the next selected piece of BarcoMed Software. If you are working with the default selections, this will be the “Barco DPMS Screen Saver”.

   If the installation of the products you selected at the beginning is complete, click **“Finish”** to exit the BarcoMed Product Install Wizard or click **“Back”** to return to the Welcome Screen of the BarcoMed Product Install Wizard to select additional software to install.

   When you click **“Finish”** Windows may prompt you to restart your system, if it does click **“Yes”**.

   Note: Clicking **“Cancel”** will also return you to the BarcoMed Product Install Wizard, but will not delete the Barco Display Driver. The wizard will also begin to install the next selected piece of BarcoMed Software.

   If the Wizard failed to successfully install the selected driver, it will warn you that the installation failed. Click **“Finish”** to return to the BarcoMed Product Install Wizard. The wizard will now begin installing the next selected piece of BarcoMed Software. Click **“Cancel”**, then click **“Yes”** then click **“Finish”**. Now **“Back”** and try reinstalling the driver following the steps above or using the steps outlined in “Reinstalling or Updating your BarcoMed Drivers” section found later in this chapter.

BARCO DPMS Screen Saver Installation

9. Click **“Next”** on the Welcome Screen of the BARCO DPMS InstallShied Wizard to begin the installation. Click **“Cancel”** to cancel the DPMS installation and return to the BarcoMed Product Install Wizard (figure 8 on the next page).

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Figure 8

10. The “Customer Information” screen will appear. The Installer will automatically fill in the blanks using the information entered when Windows was installed on your system. You may change this information if you wish. Click **“Next”** to continue.
11. The “Setup Type” page will now appear. Choose **“Typical”** to install the default schemes with English names. Choose **“Custom”** to install the default schemes with either Dutch or German names. Currently the default schemes are not supported in the Japanese, Korean and Chinese languages. We recommend that the users of these three languages install the English default schemes and then rename and save them into their language in the DPMS configuration screen. Click **“Next”** to continue.
12. The “Ready to Install Program” page will now appear, click **“Install”** to install DPMS.

    During installation the wizard will display a progress screen.
13. When the Windows Installer has finished installing DPMS, the “Installshield Wizard Completed” page will appear, click **“Finish”** to exit the BARCO DPMS InstallShied Wizard and return to the BarcoMed Product Install Wizard Welcome Screen.

After returning to the BarcoMed Product Install Wizard Welcome Screen, the wizard will clear the checkbox next to DPMS Screen Saver and will automatically launch the CORONIS Rotation Service Install Wizard if the CORONIS Rotation Service was selected when you began.

If the installation of the products you selected at the beginning is complete, click **“Finish”** to exit the BarcoMed Product Install Wizard

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or click **"Back"** to return to the Welcome Screen of the BarcoMed Product Install Wizard to select additional software to install.

If you click **"Finish"** Windows may prompt you to restart your system, if it does click **"Yes".**

CORONIS Rotation Service Installation

Special Note: The CORONIS Rotation Service is only available for systems which have the **Portrait Accelerator** in the CORONIS Display Panel and BarcoMed Display Driver releases that include the **CORONIS Rotation Service**. The CORONIS Rotation Service may not be available for your system.

14. Click **"Next"** on the Welcome Screen of the CORONIS Rotation Service InstallShied Wizard to begin the installation. Click **"Cancel"** to cancel the CORONIS Rotation Service installation and return to the BarcoMed Product Install Wizard.
15. The CORONIS Rotation Service must be installed on a local hard drive in order for it to function correctly. We recommend that you install it in the default location: C:\WINNT. If you wish to install the CORONIS Rotation Service in a different location use the **"browse"** button on the Install Location Screen of the CORONIS Rotation Service InstallShield Wizard. Click **"Next"** to continue the installation.
16. Click **"Next"** on the "Setup has enough information" screen to continue.
17. When the CORONIS Rotation Service InstallShield Wizard has finished installing the software, it will tell you that it has finished installing the software on your computer and prompt you to click **"Finish"** to complete the setup. Click **"Finish"** to exit the CORONIS Rotation Service InstallShield Wizard and to return to the BarcoMed Product Installation Wizard.

    Click **"Finish"** to exit the BarcoMed Product Installation Wizard or click **"Back"** if you wish to install additional BarcoMed software.
18. Windows may now warn you that you must restart your computer before the new settings will take effect.

    Click **"Yes"** to restart your computer now.

    Click **"No"** if you wish to restart your computer later.

    Remove your BarcoMed Software CD from its drive and click **"Yes"** to restart your computer.

    Special Notes: Even if Windows does not warn you that you must restart your computer before the new settings will take effect, you must restart your computer before the new settings will take effect.

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19. When your computer restarts, select **"NT Version 4.0 (VGA Mode)"**. Log in using an account with administrator privileges and set the resolution of your CORONIS Display Panel(s).

Setting the Resolution of Your CORONIS Display Panel

1. After you have logged in using an account with administrator privileges per step 19 above, Windows NT will launch the **"Invalid Display Settings"** dialog box, Click **"OK"**.
2. Windows will launch the **"Display Properties Contol Panel"**. Click on the **"Settings"** tab and click on the**"List all Modes**" button (figure 9 below).

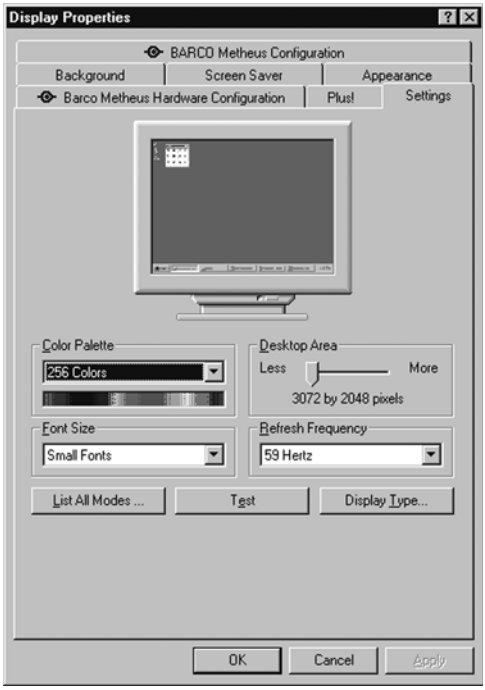


Figure 9: The Windows NT 4.0 Display Properties Control Panel after the drivers have been installed and the resolution set.

Note: The system shown in figure 9 is a single BarcoMed 3MP2FH Display Controller, no 3rd party VGA card configuration, your system may look different.

3. Select a resolution from the list that is correct for the maximum number of display adapters installed even if you will later configure

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for less than the maximum number of displays supported by your configuration. (See table on following page for examples.)

Table of Supported Resolutions		
Display Name/ Number of Heads	**Portrait**	**Landscape**
3MP2FH		
Single Head	1536 x 2048 @ 59 Hz	2048 x 1536 @ 60 HZ
Dual Head	3072 x 2048 @ 59 Hz	4096 x 1536 @ 60 HZ
Tri Head	4608 x 2048 @ 59 Hz	6144 x 1536 @ 60 HZ
Quad Head	6144 x 2048 @ 59 Hz	8192 x 1536 @ 60 HZ
2MP2FH		
Single Head	1200 x 1600 @ 60 HZ	1600 x 1200 @ 60 Hz
Dual Head	2400 x 1600 @ 60 HZ	3200 x 1200 @ 60 Hz
Tri Head	3600 x 1600 @ 60 HZ	4800 x 1200 @ 60 Hz
Quad Head	4800 x 1600 @ 60 HZ	6400 x 1200 @ 60 Hz
1MP2FH		
Single Head	1024 x 1280 @ 60 Hz	1280 x 1024 @ 60 Hz
Dual Head	2048 x 1280 @ 60 Hz	2560 x 1024 @ 60 Hz
Tri Head	3072 x 1280 @ 60 Hz	3840 x 1024 @ 60 Hz
Quad Head	4096 x 1280 @ 60 Hz	5120 x 1024 @ 60 Hz

Select **“OK”**.

4. Select the **“Test”** button and click on **“OK”** to test the display. You will be asked if it displayed correctly. If the test pattern displays correctly, select **“Yes”**. If not, click on the**“List all Modes**” button and try selecting another mode.
5. In order to apply your changes, you need to click on the **“OK”** button in the “Display Properties” dialogue box, however this button will not be visible because you are running in VGA mode. Select **“OK”** by pressing **“CTRL” + “Enter”.**
6. Windows may be asked if you want to restart your computer, if it does select **“Yes”** to restart your computer. Even if Windows does not ask you if you want to restart your computer, you must restart it and boot normally for your changes to take effect.
7. When you system restarts select the **“NT Version 4.0”** option (*NOT the VGA Mode option*). Log in as usual.

If you wish to change the number of CORONIS display panels you are using, this can be done using the **“BarcoMed Driver Tab”** of the Windows Display Control Panel.

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Reinstalling the BarcoMed Driver

To reinstall only the BarcoMed Driver, follow the steps described in the section **“Using the BarcoMed Product Installation Wizard”** with the following changes.

1. Skip Step 1.
2. In Step 4, clear the checkboxes next to the BARCO DPMS and the CORONIS Rotation Service.
3. When the driver has finished installing, click **“Finish”**. Then click **“Quit”**. Reboot the system when prompted and then reset the resolution of your displays if necessary.

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Installing the BarcoMed 3MP2FH, 2MP2FH or 1MP2FH Windows 2000 or Windows XP Software

Using the BarcoMed Product Installation Wizard

SPECIAL NOTE: Prior to installing the BarcoMed drivers and related software you MUST install the BarcoMed Display Controller(s), connect the CORONIS display panel(s) to the controller(s), and turn the CORONIS display panel(s) on. Refer to the Hardware Installation section of this manual for instructions on installing the BarcoMed Display Controller(s) and connecting them to the CORONIS display panel(s).

The following software installation instructions presume that Windows is already installed on your system. If you need to install or reinstall Windows on your system you must first remove the BarcoMed Display Controller(s) and use a 3rd party VGA card and VGA monitor during the Windows installation process.

To install your BarcoMed 3MP2FH, 2MP2FH or 1MP2FH Windows Display Controller Driver, BARCO DPMS Screen Saver and CORONIS Rotation Service for the first time follow the steps below. If you are reinstalling the drivers or installing a new driver release over an existing driver release skip to step 5:

1. Install the BarcoMed Display Controller(s) into your machine. Please refer to the hardware installation section of this manual for more information.
2. Boot the machine, and log in using an account with administrator privileges.
3. For each BarcoMed display controller installed in your system Windows will launch the “Found New Hardware Wizard”. Click **“Cancel”**. Continue to click **“Cancel”** until Windows stops launching the “Found New Hardware Wizard”. Please be patient as this may take several minutes while Windows scans its library of Plug-and-Play device drivers to see if it has a driver for your BarcoMed display controller.
4. Windows may advise you that it has finished installing all the new devices in your system and that you must reboot your system in order for the changes to take effect. If it does, Click **“No”**.
5. Insert your CORONIS Software CD into your computer’s CD drive. The “BarcoMed Product Installation Wizard” should start automatically. If it doesn’t start within 1–2 minutes, browse the contents of your CORONIS Software CD and double click on the file: **“Setup.exe”** to start the wizard.

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The BarcoMed Product Installation Wizard will begin by inspecting your system to make certain that all of the Windows components it needs are up to date. If they are, the BarcoMed Product Installation Wizard will display the BarcoMed Product Installation Wizard's welcome screen (figure 10 below).



Figure 10

If it determines that the Microsoft Installer is either out of date or missing, it will display the screen shown in figure 11 below. Click **"OK"** to continue, the wizard will then install a newer version of the Microsoft Installer.



Figure 11

The BarcoMed Product Installation Wizard will advise you when it has successfully installed the new version of the Microsoft Installer. Click **"OK"**.

The Wizard may prompt you to restart your system. If it does, click **"Yes"** to restart your system now.

When your system restarts log in using an account with administrator privileges. Windows will again launch the "Found New Hardware Wizard" for each BarcoMed display controller it

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finds in your system. Click **"Cancel"**. Continue to click **"Cancel"** until Windows stops launching the "Found New Hardware Wizard - Video Controller". Again, please be patient as Windows will again scan its library of Plug-and-Play device drivers to see if it has a driver for your BarcoMed display controller

The BarcoMed Product Installation Wizard's welcome screen will now be displayed. By default all the software on the BarcoMed Software CD will be selected (figure 10 on the previous page). For the initial installation we recommend that you install all of the software. If you do not want to install a particular BarcoMed Software product, deselect it by **clearing** the checkbox next to it.

6. Click **"Install"** on the Wizard's Welcome Screen to continue or **"Cancel"** to exit the wizard.

Driver Installation

7. Click **"Next"** on the Display Driver Wizard's Welcome Screen to continue or **"Cancel"** to exit the Display Driver Wizard and return to the Software Install Wizard.

   The Device Selection Screen's dialog box should show only those devices physically installed and supported by the BarcoMed display controller driver on your BarcoMed Software CD. If there are no BarcoMed devices installed, or if Windows does not recognize the installed devices, or if the driver on your BarcoMed Software CD does not support the installed devices, the dialog box will be empty, and the BarcoMed driver wizard will exit when you click **"Finish"** or **"Cancel"**. Select the device you want to install and then click **"Next"**.

   Caution: You can install the driver for only one type of BarcoMed device at a time. If you have multiple types of BarcoMed devices installed in your computer, you will need to rerun the installer to install the drivers for the other devices.

   If you select a device with an installed driver, the wizard will warn you if the installed driver is newer than the one you are installing (figure 12 below).



Figure 12

   If you want to change your selection, click **"OK"** to continue and then click **"Back"** on the next screen otherwise click **"OK"**.

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8. Your selection on the **"Enable DualView"** screen (figure 13 below) determines if DualView is enabled or not. DualView allows a dual head display controller to display two separate desktops, one for each display instead of a single virtual desktop that spans across both displays. Figures 14 and 15 on the next page shows the difference between running with DualView enabled or disabled. If you wish to enable DualView **"check"** the checkbox next to "Enable the DualView device?", and click **"Next"**. If you do not wish to enable DualView **clear** the checkbox next to "Enable the DualView device?", and click **"Next"** to continue.

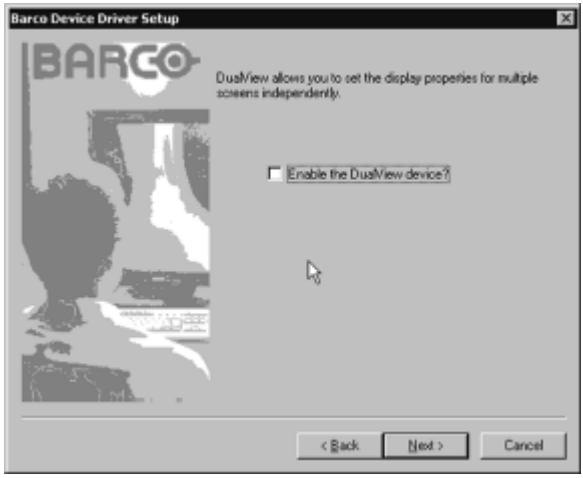


Figure 13

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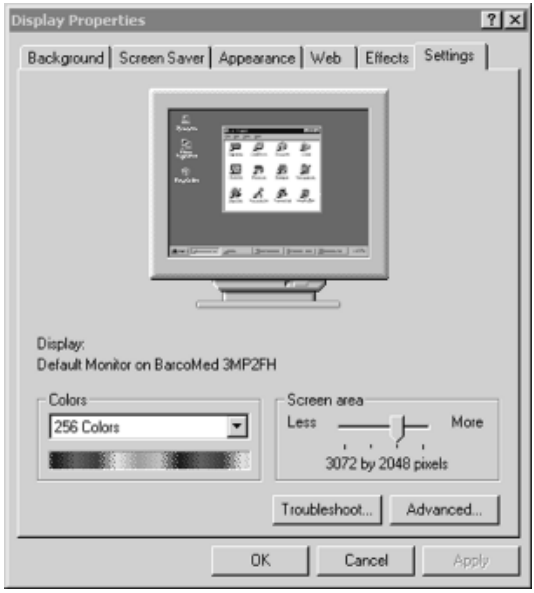


Figure 14: DualView Disabled

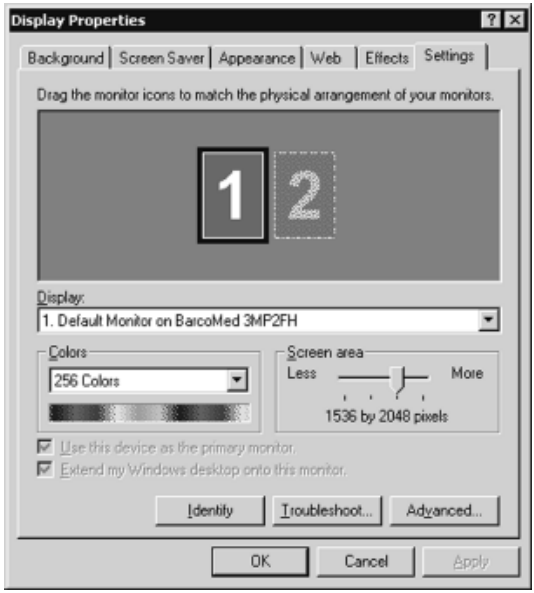


Figure 15: DualView Enabled

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Special Note: If you installed the drivers with DualView disabled, Windows will still show two devices installed for each BarcoMed Display Controller installed under “Display Adapters” in the “Device Manager Control Panel”. The second device will be disabled. This is normal. Do **NOT** try to enable any of the disabled display adapters.

9. The “Device Confirmation” screen displays the device driver that will be installed. If you want to change your selection, click **“Back”** to return to the Device Selection Screen. Click **“Next”** to begin installing the driver. Click **“Cancel”** to abort the driver installation.

   Caution: Once you click **“Next”**, you cannot cancel the driver installation.

   Prior to beginning the installation the BarcoMed Driver Install Wizard will warn you that while the driver is being installed your display may flicker. Click **“OK”** to continue.

10. When the screen shown in figure 16 or figure 17 appears, click **“Yes”** or **“Continue Anyway”** to continue. This screen may appear multiple times.



Figure 16: Windows 2000 Digital Signature Not Found Warning

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Figure 17: Windows XP Windows Logo Testing Warning

11. When the screen shown in figure 18 below appears select the palette mode you wish to use and if you want to enable DirectDraw and click “Next”.



Figure 18

12. When the Driver Install Wizard tells you that it has successfully installed the selected driver, click **“Finish”**. The wizard will now begin installing the next selected piece of BarcoMed Software. If you are working with the default selections, this will be the “Barco DPMS Screen Saver”.

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If the installation of the products you selected at the beginning is complete, click **"Finish"** to exit the BarcoMed Product Install Wizard or click **"Back"** to return to the Welcome Screen of the BarcoMed Product Install Wizard to select additional software to install.

When you click **"Finish"** Windows may prompt you to restart your system, if it does click **"Yes"**.

Note: Clicking **"Cancel"** will also return you to the BarcoMed Product Install Wizard, but will not delete the Barco Display Driver. The wizard will also begin to install the next selected piece of BarcoMed Software.

If the Wizard failed to successfully install the selected driver, it will warn you that the installation failed. Click **"Finish"** to return to the BarcoMed Product Install Wizard. The wizard will now begin installing the next selected piece of BarcoMed Software. Click **"Cancel"**, then click **"Yes"** then click **"Finish"**. Now **"Back"** and try reinstalling the driver following the steps above or using the steps outlined in "Reinstalling or Updating your BarcoMed Drivers" section found later in this chapter.

BARCO DPMS Screen Saver Installation

1.3. Click **"Next"** on the Welcome Screen of the BARCO DPMS InstallShield Wizard (figure 19 below) to begin the installation. Click **"Cancel"** to cancel the DPMS installation and return to the BarcoMed Product Install Wizard.

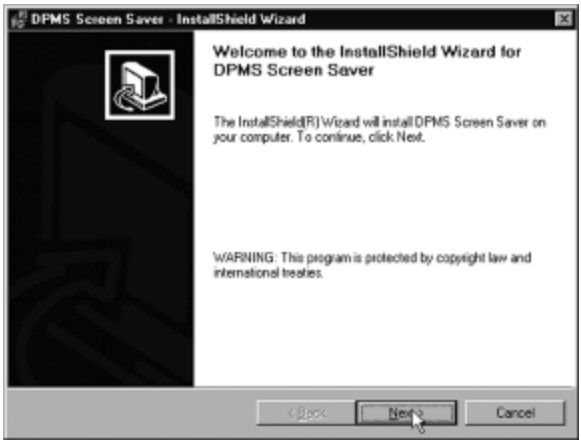


Figure 19

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14. The “Customer Information” screen will appear. The Installer will automatically fill in the blanks using the information entered when Windows was installed on your system. You may change this information if you wish. Click **“Next”** to continue.
15. The “Setup Type” page will now appear. Choose **“Typical”** to install the default schemes with English names. Choose **“Custom”** to install the default schemes with either Dutch or German names. Currently the default schemes are not supported in the Japanese, Korean and Chinese languages. We recommend that the users of these three languages install the English default schemes and then rename and save them into their language in the DPMS configuration screen. Click **“Next”** to continue.
16. The “Ready to Install Program” page will now appear, click **“Install”** to install DPMS or **“Back”** if you wish to change any of your DPMS installation settings.

    During installation the wizard will display a progress screen.
17. When the Windows Installer has finished installing DPMS, the “InstallShield Wizard Completed” page will appear, click **“Finish”** to exit the BARCO DPMS InstallShield Wizard and return to the BarcoMed Product Install Wizard Welcome Screen.

After returning to the BarcoMed Product Install Wizard Welcome Screen, the wizard will clear the checkbox next to DPMS Screen Saver and will automatically launch the Coronis I-Switch Software Install Wizard if the Coronis I-Switch Software was selected when you began installing the software.

If the installation of the products you selected at the beginning is complete, click **“Finish”** to exit the BarcoMed Product Install Wizard or click **“Back”** to return to the Welcome Screen of the BarcoMed Product Install Wizard to select additional software to install.

When you click **“Finish”** Windows may prompt you to restart your system, if it does click **“Yes”**.

CORONIS Rotation Service Installation

Special Note: The CORONIS Rotation Service is only available for systems which have the **Portrait Accelerator** in the CORONIS Display Panel and BarcoMed Display Driver releases that include the **CORONIS Rotation Service**. The CORONIS Rotation Service may not be available for your system.

18. Click **“Next”** on the Welcome Screen of the CORONIS Rotation Service InstallShield Wizard to continue the installation. Click **“Cancel”** to cancel the CORONIS Rotation Service installation and return to the BarcoMed Product Install Wizard.

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19. The CORONIS Rotation Service must be installed on a local hard drive in order for it to function correctly. We recommend that you install it in the default location: C:\WINNT (Windows 2000) or C:\Windows (Windows XP). If you wish to install the CORONIS Rotation Service in a different location use the **"browse"** button on the Install Location Screen of the CORONIS Rotation Service InstallShield Wizard. Click **"Next"** to continue the installation.
20. Click **"Next"** on the "Setup has enough information" screen to continue.
21. When the CORONIS Rotation Service InstallShield Wizard has finished installing the software, it will tell you that it has finished installing the software on your computer and prompt you to click **"Finish"** to complete the setup. Click **"Finish"** to exit the CORONIS Rotation Service InstallShield Wizard and to return to the BarcoMed Product Installation Wizard.
22. Click **"Finish"** to exit the BarcoMed Product Installation Wizard or click **"Back"** if you wish to install additional BarcoMed software.

Windows may now warn you that you must restart your computer before the new settings will take effect.

Click **"Yes"** to restart your computer now.

Click **"No"** if you wish to restart your computer later.

When your system restarts, boot normally and log in using an account with administrator privileges and set the resolution of your CORONIS displays.

Configuring the Windows Desktop and Setting the Resolution of your CORONIS Display

Note: Prior to setting the resolution of your high resolution display under Windows 2000 or Windows XP, you need to configure your desktop.

Configuring the Windows 2000 or Windows XP desktop

Under Windows 2000 or Windows XP the recommended configuration for best grayscale image quality when using a color display in conjunction with your high-resolution grayscale displays is to set the color display as the primary monitor, with the colors setting on the "Settings" tab of the Windows Display Control Panel set to the highest possible color depth (e.g. 32 bits-per-pixel "true color") supported by the color display's controller.

The colors setting for your high-resolution grayscale displays should default to 256 colors (8 bits per pixel). The palette mode for the your high-resolution grayscale displays should be set to Static Gray palette

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mode with NO system colors. This guarantees that the all of the 256 gray levels available for GDI graphics will be present, and also eliminates the danger that colors will change when focus moves among different applications.

However, if you are using the Color to Gray Conversion Palette mode, the color setting for your high-resolution grayscale displays should default to True Color (32 bits per pixel). Even though this palette mode supports 32 bit True Color, we recommend that when using a using a color display in conjunction with your high-resolution grayscale display(s) that you still set the color display as the primary monitor.

(For more information refer to our Frequently Asked Questions page on our website: www.barcomedical.com.)

Setting the Resolution of Your CORONIS Display Panel

1. To set the resolution for your CORONIS display panel(s), right click on the desktop and select **"Properties"**. Select the **"Settings"** tab. Now select the **rectangle** that represents the BarcoMed Display Controller you are working with.

   SPECIAL NOTE: If you are using the VGA capabilities of your BarcoMed Display Controller, the resolution for that controller will still be set to a VGA resolution of "640 x 480" pixels. If the BarcoMed Display Controller is not running VGA, the device may not be enabled yet. To enable the device **check** the "Extend my Windows desktop onto this monitor" checkbox. Do not click the **"Apply"** button at this time.

   If you installed your BarcoMed display drivers in SingleView mode (default for Windows 2000) there will be one rectangle for the virtual display representing the two heads controlled by each BarcoMed display controller.

   If you installed your BarcoMed display drivers in DualView mode (default for Windows XP) there will be a rectangle representing each head controlled by each BarcoMed display controller. This will be true even if you have only one display connected to your BarcoMed display controller. Both displays of a display controller cannot be attached to the desktop at the same time unless their display properties match. If necessary detach the second display of the BarcoMed display controller you are working with by right clicking on the rectangle that represents it, deselect **"Attached"** and click the **"Apply"** button.

   Note: Since Windows will not let you detach the primary display connected to a particular controller, you may need to temporarily make another display the primary display.

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If you have a single display configuration and you have enabled DualView, Windows will not allow you to attach the second head. This is normal and not a bug.

2. For the display which is still attached click on the **"Advanced"** Button.
3. Select the **"Adapter"** tab and then click on the **"List All Modes..."** button. Select the resolution and refresh rate that your Coronis display supports from the dialog box and click **"OK"**.

   Note: In the Adapter box, the Adapter string shows if this display is the First View or the Second View attached to the Display Controller. Please make a note of this, so that you can arrange the displays in the correct order later if necessary.
4. Click **"OK"** on the bottom of the Adapter Control Panel. If the **"OK"** button on the bottom of the Adapter Control Panel is not visible, press the **"TAB"** key once and then press **"CTRL"+"Enter"** to select **"OK"**.
5. Click **"OK"** in the "Windows will now apply your new desktop settings" dialog box. Your Coronis display should now synchronize and display the Windows desktop.
6. Click **"Yes"** when asked, "Your desktop has been reconfigured. Do you want to keep these settings?"

To set the resolution of the second display attached to the BarcoMed Display Controller you are working with, go back to the **"Settings"** tab of the "Display Properties Control Panel". Attach the second display you detached in step 2 above, by right clicking on the rectangle that represents it and selecting "**Attached"**.

Now repeat steps 3-6 above for this display.

If you are using a Quad-Head Configuration repeat all of the above steps for the two displays on the second display controller.

Tip: After installing DualView and setting the resolutions in a Quad-Head Configuration you may need to drag the heads into the proper position in the window on the "Settings" tab, so that the arrangement in the window on the "Settings" tab matches the physical arrangement of your configuration.

Enabling or Disabling DualView

If you wish to either enable or disable DualView at a later time, you may do so through the Monitor Configuration drop down menu on the BarcoMed Driver tab. Please refer to the BarcoMed Driver Tab chapter of this manual.

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BARCOMED DRIVER TAB

Introduction

After the BarcoMed Windows Display Controller Driver is installed, a new Display Properties tab is available for configuring special features of the BarcoMed Display Controller. Please note that you must have logged on to Windows using an account with administrator privileges in order to use the BarcoMed Tabs of the Windows Display Properties Control Panel to change any display settings.

Accessing the BarcoMed Driver Tab

1) Open the “Display Properties Control Panel” by right clicking on the desktop, then select “Properties”.
2) Under Windows NT 4.0, Click on the “BarcoMed Driver” tab (see figure 20 below).

   Under Windows 2000 and Windows XP, click on “Settings” tab. Double click on the rectangle that represents the BarcoMed Display Controller to bring up its property page. Click on the “BarcoMed Driver” tab (see figure 21 on the next page).

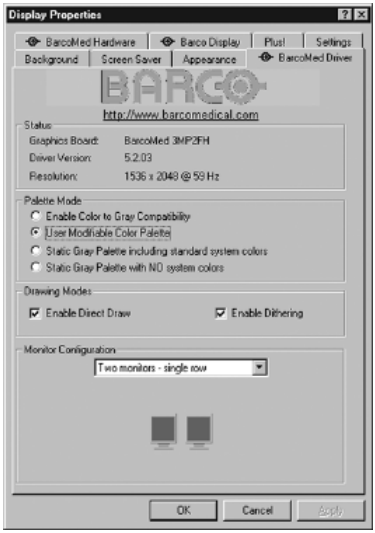


Figure 20: BarcoMed Driver Tab under Windows NT 4.0

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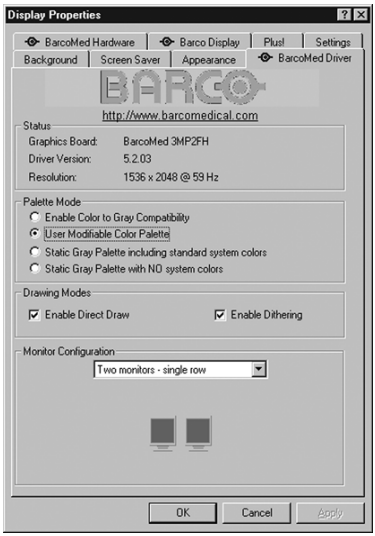


Figure 21: BarcoMed Driver Tab under Windows 2000 and Windows XP

Status

Displays the current BarcoMed Display Controller, driver, and the currently selected display resolution.

Graphics Board

This displays the current BarcoMed Display Controller.

Driver Version

This displays the current BarcoMed driver version.

Resolution

This displays the currently selected display resolution.

Palette Mode

You may choose one of the following four Palette Modes:

Color to Gray Compatibility

Use this palette option for applications, such as Java, which require True Color support. Such applications may not work correctly when

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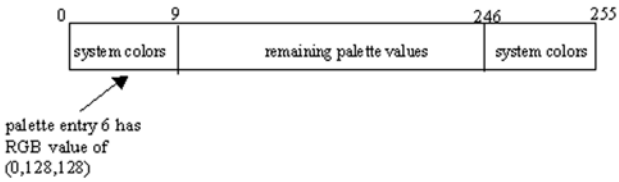
using one of Barco's three "Standard 8-bit (256-color)" palette modes. All applications that are designed to work correctly with 8-bit (256-color) modes should continue to work normally.

Please note that dithering is not used while in this mode. The Enable Dithering check box will be grayed-out, and dithering will be automatically disabled regardless of whether this check box is checked. This complies with the Windows standard interface method.

Also, please note that direct access to the hardware through DirectDraw is not allowed in this mode. The Enable DirectDraw check box will be grayed-out, and DirectDraw's access to the hardware will be automatically disabled regardless of whether this check box is checked. DirectDraw is still useable through DirectDraw's Hardware Emulation Layer.

UserModifiable Color Palette

This option allows applications to modify the palette contents dynamically. As indicated by the picture on the next page, this mode reserves the first 10 and last 10 entries in the palette for the Windows operating system, but applications can manipulate the middle 236 entries. This is the standard palette mode as configured by Windows.

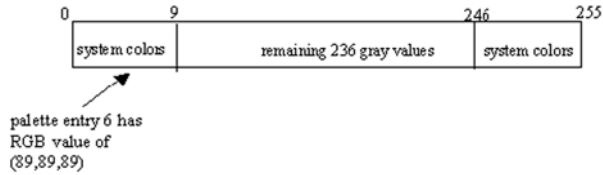


Static Gray Palette including standard system colors

This option sets the palette to be a static set of 256 gray values. Therefore, applications are denied the ability to dynamically change or allocate palette entries. This prevents palette conflicts between applications, which can cause image color values to appear distorted in the background application.

As shown in the next picture, the 20 standard system colors are converted from RGB to gray values. The rest of the 236 entries from index 10 to 245 contain the missing gray values so that the palette has the full 256 gray values within it.

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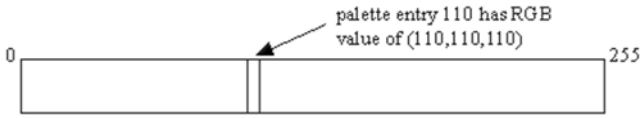


Please note that dithering is not permitted while in this mode. The Enable Dithering check box will be grayed-out, and dithering will be automatically disabled regardless of whether this check box is checked. This complies with the Windows standard interface method. If you are unsure whether or not your application requires this “Static Gray Palette including Standard System Colors” mode, contact your application provider.

Static Gray Palette with NO system colors

This option sets the palette to be a static linear ramp of 256 shades of gray. Therefore, applications are denied the ability to dynamically change or allocate palette entries. This prevents palette conflicts between applications, which can cause image color values to appear distorted in the background application.

As shown in the next picture, each of the 256 entries in the palette has an RGB value of (i, i, i) where i is the index from 0 to 255.



If you wish to use a static gray palette we recommend using the “Static Gray Palette including Standard System Colors” option instead of this one. This is due to the fact that some applications assume that the first and last 10 entries of the palette are the standard system colors. In this palette mode, these entries are made up from entries in the bottom or the top of the gray ramp. Please note that dithering is not permitted while in this mode. The Enable Dithering check box will be grayed-out, and dithering will be automatically disabled regardless of whether this check box is checked. This complies with the Windows standard interface method. If you are unsure whether or not your application requires this “Static Gray Palette with NO System colors” mode, contact your application provider.

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Drawing Modes

You may choose one or both of the following Drawing Modes:

Enable DirectDraw

This option allows the user to enable or disable DirectDraw. DirectDraw is a software interface that provides direct access to display devices while maintaining compatibility with the Windows graphics device interface (GDI). DirectDraw provides a device-independent way for applications to gain access to the hardware features of specific display devices. If you enable DirectDraw, your application will have the choice of using DirectDraw or GDI. If you disable DirectDraw, your application will use GDI instead of DirectDraw. Please note that in any case, your application can always use BarcoMed driver functions (i.e. WinBarco) or other graphics extensions (such as OpenGL).

Enable Dithering

This option allows the user to enable or disable dithering. Dithering is a technique for increasing the perceived range of colors in an image at the cost of spatial resolution. Adjacent pixels are assigned differing color values; when viewed from a distance, these colors seem to blend into a single intermediate color. The technique is similar to the half-toning used in black-and-white publications to achieve shades of gray. Please note that this option is only available when the User Modifiable Palette Mode is selected. This is because dithering is only supported under Windows when the display is palletized. If either the “Static Gray Palette including Standard System Colors” mode or the “Static Gray Palette with NO System colors” mode is selected, the “Enable Dithering” check box will be grayed-out, and dithering will be automatically disabled regardless of whether this check box is checked. This complies with the Windows standard interface method.

Monitor Configuration

This option allows you to select the number of monitors that the current display boards should drive, as well as how the monitors should be positioned. For example, if the current board installation is capable of driving four heads, but you only have three monitors which are placed in a single row, then you can select the “Three monitors – one row” option from the pull-down list. This would cause the Windows virtual desktop to be resized to fit on the three monitors, and you can move your cursor horizontally from one screen to the other.

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If “Custom Configuration” is displayed, it means that the current monitor configuration was set via the registry and it doesn’t agree with any of the configurations that the display control panel supports. Contact BarcoView Medical Imaging Systems for further information.

Under Window 2000 or Windows XP you may also enable or disable DualView through the Monitor Configuration drop down menu. When changing from SingleView to DualView or DualView to SingleView, your system will automatically shutdown and restart when you click the **“Apply”** button. When your system comes back up, you may need to re-set up your CORONIS displays with the desired display settings.

Languages supported

The BarcoMed Driver Tab supports the following languages:

English (U.S) (default)
Dutch
German
Korean
Japanese
Simplified Chinese
Traditional Chinese

To change between the languages select the correct region via the Regional Settings Control Panel in your machine’s Start > Settings > Control Panel.

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BARCOMED HARDWARE TAB

Introduction

The BarcoMed Hardware Tab is used for gathering information about BarcoMed Display Controller(s). For all BarcoMed Display Controller(s) it will display PCI information. In addition for BarcoMed Display Controller(s) based on the AURA video chipset it will also display information about the Firmware installed on the board.

BarcoMed Board Types		
AURA Boards	**Non-AURA Boards**	**BARCO Metheus Hardware Configuration Tab Support**
1MP2FH		PCI and Firmware Information
2MP2H		PCI and Firmware Information
2MP2FH		PCI and Firmware Information
3MP2FH		PCI and Firmware Information
5MP2AURA		PCI and Firmware Information
5MP2F		PCI and Firmware Information
	2MP1	PCI Information Only
	2MP1NT	PCI Information Only
	2MP2	PCI Information Only
	4MP2	PCI Information Only
	5MP1H	PCI Information Only
	5MP2	PCI Information Only

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To access the BarcoMed Hardware Tab do the following:

1. Open the “Display Properties Control Panel” by right clicking on the desktop, then select “Properties”.
2. Under Windows NT 4.0, Click on the “BarcoMed Hardware Tab” (see figure 22 below).

   Under Windows 2000 and Windows XP, click on the “Settings” tab. Double click on the rectangle that represents the BarcoMed Display Controller to bring up its property page. Click on the “BarcoMed Hardware Tab” (see figure 23 on the next page).



Figure 22: BarcoMed Hardware Tab under Windows NT 4.0

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Figure 23: BarcoMed Hardware Tab under Windows 2000 and Windows XP

Using The BarcoMed Hardware Tab

Device

Displays the current BarcoMed Display Controller, driver, and the currently selected display resolution.

Identify Device: This button is for BarcoView Medical Imaging Systems (MIS) internal use only and is grayed out.

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PCI Information

Device ID: Displays the device's PCI Device ID number.

Vendor ID: Displays the device manufacturer's PCI Vendor ID number.

Subsystem ID: Displays the device's PCI Subsystem ID number.

SubsystemVendorID: Displays the device's PCI Subsystem Vendor ID number.

VGA Status: Displays whether the VGA capabilities of the BarcoMed controller are enabled or disabled.

Firmware Information

Product Name: Displays the name of the BarcoMed Display Controller installed in the selected PCI slot.

Serial Number: Displays the serial number of the BarcoMed Display Controller installed in the selected PCI slot.

VGA Bios Version: Displays the VGA Bios version for the BarcoMed Display Controller installed in the selected PCI slot.

Firmware Version: Displays the firmware version for the BarcoMed Display Controller installed in the selected PCI slot.

Hardware Version: Displays the Hardware Version for the BarcoMed Display Controller installed in the selected PCI slot.

"Advanced ..." Button: By clicking on this button, the user can display more information about the BarcoMed Display Controller installed in the selected PCI slot.

Utilities

"Generate Report" Button: Clicking this button will start the BarcoMed Self Exam wizard. Please follow the guidelines in the wizard.

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“Update Device...” Button: Clicking this button will run the BarcoMed Hardware Configuration Wizard. This program allows the user to flash update the firmware stored in the ROM of the currently selected BarcoMed Display Controller. The BarcoMed Hardware Configuration Wizard is a “wizard style” application that uses dialog boxes to guide the user through the flash update procedure. The user will be prompted to select a firmware update file to use for the update therefore you will need a firmware update file for your specific BarcoMed Display Controller in order to update it’s firmware. This file will be provided by BarcoView MIS if and when a firmware update is required.

Special Note: The BarcoMed Hardware Configuration Wizard is applicable only for AURA-based Display Controller(s).

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BARCO DISPLAY TAB

Introduction

The BARCO Display Tab is used for gathering information about the BarcoMed Flat Panel Display(s).

To access the BARCO Display Tab do the following:

1. Open the “Display Properties Control Panel” by right clicking on the desktop, then select “Properties”.
2. Under Windows NT 4.0, Click on the “BARCO Display Tab” (see figure 24 below).



Figure 24: BARCO Display Tab under Windows NT 4.0

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Under Windows 2000 and Windows XP, click on the “Settings” tab. Double click on the rectangle that represents the BarcoMed Display you are working with to bring up its properties page. Click on the “BARCO Display” tab (figure 25).



Figure 25: BARCO Display Tab under Windows 2000 and Windows XP

Using The BARCO Display Tab

Displays

All of the available display adapters that are of the same type as the current barco display adapter are shown here graphically, with one display icon representing each port of a display adapter. The icon orientation reflects the display resolution. Only those ports with a display attached to them are active. If an icon is grayed out, that indicates a port with no head attached to it. When running DualView under Windows 2000 and Windows XP the desktop must be extended

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to include each display, otherwise those ports will not be visible to the BARCO Display Tab.

Hovering the cursor over a display icon will pop up a window with information that identifies the display.

Properties

You may acess the Properties page of the currently selected display, which is represented by the monitor icon above with the black frame around it, by either clicking on the **"Properites"** button or double clicking on the icon.

BarcoMFD library

This is the version of the barcomfd library currently used. This library provides APIs for interacting with the displays.

Coronis Display Properties

You may acess the Properties page of the currently selected display, which is represented by the monitor icon above with the black frame around it, by either clicking on the **"Properites"** button or double clicking on the icon. This screen (figure 26 on the next page) shows properties of the currently active display.

Name: Displays the model name of the display.

Serial Number: Displays the serial number of the display.

Backlight RunTime: This is time in hours that the back light has been on. A common question is: How much longer will the backlight last? The backlight will typically last a very long time, but will only be able to hold a calibrated output of 500 cd/m² for 17000 hours, after which time it will become slowly dimmer. For displays calibrated at 500 cd/m², an estimate of how long it will be before a backlight replacement is needed = 17000 hours – backlight age.

Firmware Revisions: This is the runtime firmware that is loaded in the display. This information may be helpful when there is a problem.

Internal Temperature: This is the temperature inside the display. It starts out at about the ambient temperature when the display backlight is first turned on, then rises slowly to a steady-state temperature as the display warms up. Changes in light level due to temperature variations are completely controlled by the I-Guard sensor on the front of the display.

Current Luminance Value: This is the current luminance value of the display. It may vary a bit from time to time, for the display continuously calibrates itself to meet the target luminance value.

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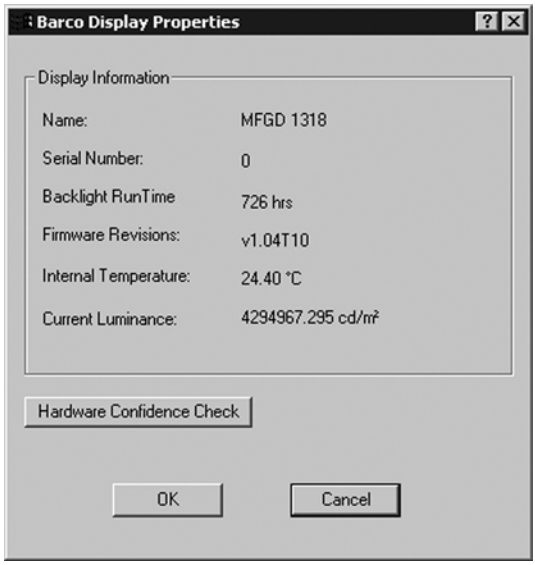


Figure 26

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BARCO DPMS SCREEN SAVER OVERVIEW

Introduction

The BARCO DPMS (Display Power Management Signaling) Screen Saver allows the user to set power and display saving features for medical displays driven by BarcoMed Display Controllers. At the end of the work day, the display will enter certain DPMS states as requested by the display controller.

The default state for the BARCO DPMS Screen Saver is the Off state. In addition to simply entering the Off state after the work day, the user can specify that the display first go through two other DPMS Screen Saver states before going into Off state. These two other states for the Screen Saver are Stand-By and Suspend. The user can specify how much time should be spent in each state in the “Amount of Time in each DPMS Power State” section.

A valuable feature of the BARCO DPMS Screen Saver is that it will automatically ensure that Cathode Ray Tube (CRT) based displays are warmed up for the start of the work day. All CRT based displays require some warm-up time before they are at full performance.

On CRT based displays, such as the Barco MGD series, a “regular” screen saver can be invoked during user inactivity during the work day. This “regular” screen saver and its settings can be chosen from the “Screen Saver During Work Day” section. We recommend using an all black screen saver, such as the “Barco Metheus Blank Screen” saver, for the longest phosphor life.

On Barco CORONIS displays, the I-GUARD will stabilize the image within a few seconds after the display returns to the active state, thus eliminating the need for a warm-up period at the beginning of the work day.

On Liquid Crystal Display (LCD) based displays, such as the Barco CORONIS displays, it is not necessary to invoke a screen saver as there is no CRT phosphor to preserve. However, one can extend the life of the backlight in the LCD display, in addition to realizing great power savings, during period of user inactivity by using DPMS to quickly enter the Off state. We recommend setting the work day to be as short as possible to get the maximum power savings on CORONIS displays.

The BARCO DPMS Screen Saver can also be used when no one is logged on.

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BARCO DPMS Screen Saver Options

From the “BARCO DPMS Screen Saver Control Panel” you can change many DPMS screen saver elements simultaneously. The DPMS screen saver elements in each scheme are work schedule, work day screen saver, DPMS settings after work day, and many additional options.

Current Scheme

Lists the three “DEFAULT” schemes which you can use as they are. Or you can modify them to meet your office’s schedule.

Save As

Saves your current BARCO DPMS Screen Saver settings. The name you specify will appear in the Scheme list so you can easily restore these settings later.

Delete

Deletes the scheme that is selected in the Scheme box.

Work Schedule

In this part of the control panel the user may specify the “Begin Work Day” and “End Work Day” times for each work day. If the system is not expected to be used, leave both the “Begin Work Day” and the “End Work Day” times as the same time.

Begin Work Day

The “Begin Work Day” time is the time after which the system is expected to start being used. During the work day, the screen saver selected by the user in the “Screen Saver During Work Day” section is used during user inactivity.

End Work Day

The “End Work Day” time is the time after which the system is not expected to be used any more for that day. After the work day, the display is set to one of the DPMS states (Stand-By, Suspend, or Off) by the display controller during user inactivity.

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Screen Saver During Work Day

On CRT based displays, such as the Barco MGD series, a “regular” screen saver can be invoked during user inactivity during the work day. This “regular” screen saver and its settings can be chosen from the “Screen Saver During Work Day” section. We recommend using an all black screen saver, such as the “Barco Metheus Blank Screen” saver, for the longest phosphor life.

On LCD based displays, such as the Barco CORONIS displays, it is not necessary to invoke a screen saver as there is no CRT phosphor to preserve. However, one can extend the life of the backlight in the LCD display, in addition to realizing great power savings, during period of user inactivity by quickly entering the Off state. We recommend setting the work day to be as short as possible to get the maximum power savings on CORONIS displays.

Available Savers

Lists the Available Screen Savers.

Settings

Changes settings for the selected screen saver.

DPMS Settings After Work Day

If you have an display controller that supports DPMS calls, then you will be able to set the DPMS Settings for after the work day. Otherwise, a text box will be displayed telling you why DPMS functions are not available.

Amount of Time in each DPMS State

After the work day, the display will be placed into one of the following DPMS Power States: Stand-By, Suspend, or Off. The default setting is for the display to directly go into the Off State and spend no time in the Stand-By or Suspend states. If the user wishes to go into the Stand-By or Suspend states before going into the Off state, select the required amount of time for each state.

If requested, the display will first go into Stand-By state, then into Suspend state, and then into Off state. The properties of DPMS states are listed in the following table:

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DPMS State	Power Savings	Monitor Recovery Time
On	None	N/A
Stand-by	Minimal	Short
Suspend	Substantial	Longer
Off	Maximum	Longest

Monitor Settings

Select the amount of time the display requires to warm-up. Since all CRT based displays require some warm-up time before they are at full performance, this ensures that the display is ready for use at the beginning of the work day.

If you have a Barco Medical Display, select “Barco Quick Start.” If a non-Barco display is being used, select the amount of time it takes your display to warm up via the “Monitor Setting” section. Contact your display vendor for this warm-up time.

On Barco CORONIS displays, the I-GUARD will stabilize the image within a few seconds after the display returns to the active state so there is no need for a warm-up time period.

Use As Logon Screen Saver

Check the box to use the BARCO DPMS Screen Saver when no one is logged into the system.

Uncheck the box to use the default screen saver when no one is logged into the system.

Getting started with the BARCO DPMS Screen Saver

The easiest way to get started is to select an existing settings scheme and then modify it with your preferences. Settings schemes are separated into two kinds, DEFAULT (global) and PRIVATE (personal).

Upon installation, three default settings schemes are installed and no private settings schemes are installed.

Default settings schemes are visible to all users of the system. However, they can be modified only by users with administrator

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privileges. If a user who does not have administrator privileges tries to save a scheme using an existing default scheme name, an error message is displayed saying “you must have administrator rights to modify a default scheme.” If an administrator saves a scheme using an existing default scheme name, a message is displayed to tell the user that the modification is saved to a default scheme and will be visible to all users. If the administrator saves a scheme using a new name, then the user is asked if the scheme should be saved as a default scheme or a private scheme. Since there is no distinction between how a default scheme and a private scheme is displayed, it is highly recommended that the user uses a different naming convention to distinguish the two (i.e. use “DEFAULT: ...” for default schemes).

Private schemes are personal. They are not shared and are visible only to the users who created them. All users of a system, including those who do not have administrator privileges, can create, modify or delete private schemes. When the delete button is pressed, the user is asked to confirm the delete request.

Using the BARCO DPMS Screen Saver

Using the Barco DPMS Screen Saver is similar to using any other Windows Screen Saver, each user of the system must select the Barco DPMS Screen Saver so that Windows will store the selection in the user’s profile. If a user does not select the BARCO DPMS Screen Saver as his screen saver, the next time he logs on to the system the screen saver selection may be blank.

After selecting the BARCO DPMS Screen Saver the user must then select a settings scheme for the Screen Saver to follow. To set up the BARCO DPMS Screen Saver using one of the three default schemes, please do the following:

1. Open the “Display Properties Control Panel” by right clicking on an empty space of the desktop and selecting “Properties” from the drop down menu; then select the **“Screen Saver”** tab (see figures 27, 28 and 29 on the next two pages).
2. Select the **“Barco DPMS Screen Saver”** in the “Screen Saver” drop down menu if it is not already selected.

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Figure 27: Windows NT 4.0 Screen Saver Tab



Figure 28: Windows 2000 Screen Saver Tab

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Figure 29: Windows XP Screen Saver Tab

3. Click on the **"Settings"** button. The "BARCO DPMS Screen Saver Control Panel" will open (figure 30 below).

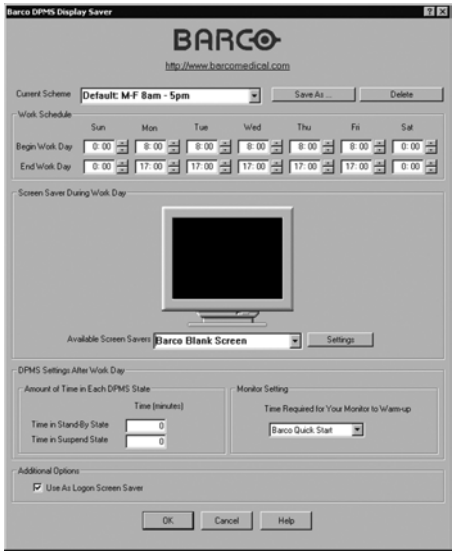


Figure 30: BARCO DPMS Settings Control Panel

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4. Use the default schemes by selecting one of the three default schemes. Click **"OK"**. Then Click **"OK"** again.

   Note: If you make any changes to any of the settings of one of the three default schemes, the Current Scheme field will blank and you MUST SAVE your changes by clicking on the **"Save As ..."** button. When you click on the **"Save As ..."** button, the name of the last scheme you used will be automatically displayed, you can then choose to use that scheme name or enter a new name. If you enter a name other than one of the three default scheme names, the program will ask you if you wish to save the scheme as a DEFAULT scheme (see figure 31 below). Click **"Yes"** to save the settings scheme as a DEFAULT scheme, click **"No"** to save the scheme as a PRIVATE scheme. After you have saved the scheme, then click OK and the new scheme will be in effect.

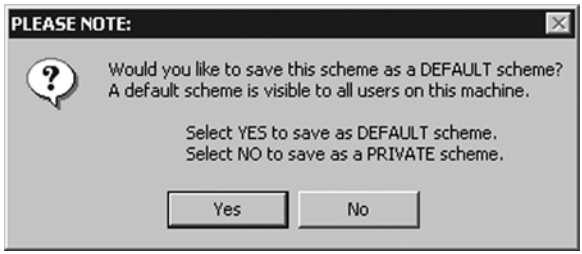


Figure 31

To create a new scheme by modifying one of the three default schemes please do the following.

1. Open the "Display Properties Control Panel" by right clicking on an empty space of the desktop and selecting "Properties" from the drop down menu; then select the **"Screen Saver"** tab.
2. Select the **"BARCO DPMS Screen Saver"** in the "Screen Saver" drop down menu if it is not already selected.
3. Click on the **"Settings"** button. The "BARCO DPMS Screen Saver Control Panel" will open.
4. Select one of the default schemes from the "Current Scheme" drop down menu.
5. Set the Work Schedule by setting the beginning and ending time of your work day for each day of the week.
6. Select the screen saver you wish to use during the work day in the "Screen Saver During Work Day" section.
7. Select the amount of time you wish to spend in the Stand-By and Suspend states after the work day has ended. Please note that

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after the time specified has elapsed when you are in Stand-By or Suspend, you will automatically go into the Off state.

8. Select the amount of time it takes for your display to warm up. If you have a Barco Medical Display, select **"Barco Quick Start"**. If you are using a non-Barco display, select the amount of time it takes your display to warm up via the "Monitor Setting" section. Contact your display vendor for this warm-up time. On Barco CORONIS displays, the I-GUARD will stabilize the image within a few seconds after the display returns to the active state, thus eliminating the need for a warm-up period at the beginning of the work day.
9. If you wish to use this DPMS screen saver as the screen saver at logon time, check the **"Use As Logon Screen Saver"** box in the "Additional Options" section.
10. Save your preferences by pressing the **"Save As"** button and entering a new profile name in the **"Save Profile Setting"** dialog box.
11. Apply your new scheme by clicking **"OK".**
12. Click **"OK"** again to close the "Display Properties Control Panel".

Installing or Reinstalling BARCO DPMS

To install or reinstall the BARCO DPMS Screen Saver insert the CORONIS Software CD in the appropriate device on your computer and run the BarcoMed Product Install Wizard (please see the section Software Installation for complete instructions).

Special Note: Reinstalling the BARCO DPMS Screen Saver will over write the DPMS configuration settings and you will need to reconfigure the DPMS settings on your system.

Uninstalling BARCO DPMS

To remove the BARCO DPMS Screen Saver from your system insert the CORONIS Software CD in the appropriate device on your computer, run the BarcoMed Product Install Wizard and follow these steps.

1. Select only the DPMS Screen Saver on the BarcoMed Product Install Wizard's welcome screen and click **"Install"**.
2. Click **"Next"** on the Welcome Screen of the BARCO DPMS InstallShield Wizard to begin the installation.
3. Select the radio button next to "Remove" on the Program Maintenance screen of the Wizard and click **"Next"** (see figure 32 on the next page).

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Figure 32

4. Click **"Remove"** on the Remove Program Screen of the Wizard.
5. When the Wizard has finished removing the program, click **"Finish"** on the InstallShield Wizard Completed Screen of the Wizard.
6. Click **"Quit"** to exit the BarcoMed Product Installation Wizard.

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CORONIS ROTATION SERVICE

Overview

Special Note: The CORONIS Rotation Service is only available for systems which have the **Portrait Accelerator** in the CORONIS Display Panel and BarcoMed Display Driver releases that include the **CORONIS Rotation Service**. The CORONIS Rotation Service may not be available for your system.

The CORONIS Rotation Service is designed to detect changes in the physical orientation of the rotatable CORONIS flat-panel display(s) and to change the resolution of the display to match the physical orientation of the display. The CORONIS Rotation Service will support up to eight CORONIS flat-panel displays on four BarcoMed Display Controllers. The CORONIS Rotation Service supports Windows NT 4.0 Service Pack 4 and above, Windows 2000 and Windows XP.

The CORONIS Rotation Service is designed to react *only* to changes in physical orientation of the CORONIS flat-panel displays, not to changes in screen resolution effected from the Windows Display Control Panel. The CORONIS Rotation Service functions only after the CORONIS Windows Display Controller Drivers have been installed, the resolution set using the Windows Display Control Panel and the CORONIS Rotation Service has been installed.

CORONIS Rotation Service will have a limited user interface available through an icon in the system status tray. The system tray icon is just a toggle to put the service to sleep. During this sleeping phase, the Service will continue to track changes in the physical orientation. The service will use these saved settings to set the appropriate state model on startup.

Windows NT 4.0

Because Windows NT 4.0 supports only one type of display controller at a time, rotating a single head will affect the resolution for all the displays connected to all the BarcoMed Display Controllers installed in your system.

Windows 2000 and Windows XP

Although Windows 2000 and Windows XP support multiple types of display controllers, they support only one resolution per display controller. Rotating a single head on any given BarcoMed Display Controller will affect both of the heads connected to that display controller. If you change the physical orientation of one CORONIS display connected to any given BarcoMed Display Controller, the CORONIS

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Rotation Service will change the resolution for both of the CORONIS displays connected to that BarcoMed Display Controller and you will need to change the physical orientation of the second display to match the orientation of the first display.

Installation or Reinstallation

To install or reinstall the CORONIS Rotation Service insert the BarcoMed Software CD in the appropriate device on your computer and run the BarcoMed Software Install Wizard and select only the CORONIS Rotation Service (please see the section Software Installation for complete instructions).

Removal of CORONIS Rotation Service

To remove the CORONIS Rotation Service from your system, do the following steps.

1. Click on the Windows **“Start”** button.
2. Click on **“Run”**.
3. Type the following text in the dialog box: **“cmd”**.
4. Click on **“OK”**.
5. Type the following text in the command line window: **“coronisrotationservice /uninstall”**
6. When the program has finished, closed the command line window.

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MEDICAL SOFTWARE INSTALLATION AND USAGE

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MEDICAL SOFTWARE INSTALLATION

Install MediCal on the PC. Follow the instructions from the MediCal User Guide.

Important: Do not forget you have to have Administrator privileges to install or uninstall MediCal.

USING MEDICAL

You can now use MediCal to configure the complete configuration and set up the Q/A tasks.

Proceed as follows:

1. Start MediCal. If appropriate, you can connect to MediCal Administrator.
2. Set up the configuration in MediCal by using the **Configuration Setup** wizard.
3. If necessary, align the displays' geometry settings.
4. For all the displays in the system, check if the DPMS setting is turned on. Therefore, right-click on the display icon and select **Properties...** from the drop-down menu. Then click on **Details...** Check if the **Powersave** option is checked. If not, check it. This is necessary to use the DPMS possibilities of the display controller.
5. For all the displays in the system, define (if necessary) and select a Preset.
6. After selecting the Preset, MediCal starts consistency calibration automatically.
7. Define the Q/A task schedule.
8. Run the due tasks.

Please refer to the MediCal User Guide for more information.

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