



Dome E2c Display User's Guide

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Product Information

The design of the Dome E2c digital display takes into account every known measure to ensure your personal safety. Improper use of the display can result in electric shock, fire, or damage to the display. Read all instructions before setting up the display.

Classification:

Shock Protection: Class I.

Degree of Protection Against Electric Shock: No applied part.

Degree of Protection Against Harmful Ingress of Water:
Ordinary equipment (IPX0).

Degree of Safety in the Presence of Flammable Anaesthetic Mixture with Air or with Oxygen or Nitrous Oxide:
Not suitable for use in the presence of a flammable anaesthetic mixture with air or with oxygen or nitrous oxide.

Mode of Operation: Continuous.

Important recycle instruction:



Lamp(s) inside this product contain mercury. This product may contain other electronic waste that can be hazardous if not disposed of properly. Recycle or dispose in accordance with local, state, or federal laws. For more information, contact the Electronic Industries Alliance at WWW.EIAE.ORG. For lamp-specific disposal information, check WWW.LAMPRECYCLE.ORG.

Symbol explanations



DISPOSAL. Do not use household or municipal waste collection services for disposal of electrical and electronic equipment. EU countries require the use of separate recycling collection services.



CAUTION. Read the accompanying text carefully, for proper operation and maintenance of the display system.



DANGEROUS VOLTAGE. Important precautions about electric shock. Read the accompanying text carefully, to prevent damage to components of the display system and for your safety.



DIRECT CURRENT.



BAROMETRIC PRESSURE. Transport and storage 12,000 m (39,400 ft), maximum in unpressurized container.



RELATIVE HUMIDITY. Transport and storage <70% (non-condensing).



TEMPERATURE. Transport and storage -20° to 60° C.

Intended use

The Dome E2c display is an AMLCD display designed for viewing medical X-ray images. This unit should not be used near patients and should be kept outside of 1.83 m perimeter and 2.29 m vertical.

This device must not be used in primary image diagnosis in mammography.

CAUTION: Federal law restricts this device to sale by or on the order of a medical practitioner.

Safety precautions

External equipment intended for connection to signal input, signal output, or other connectors, must comply with the relevant IEC standard (EN/IEC 60601-1 series for medical electrical equipment). In addition, all such combinations (systems) must comply with the standard IEC 60601-1-1, Safety requirements for medical electrical systems.

Equipment not complying to IEC 60601 must be kept outside the patient environment, as defined in the standard as at least 1.5 meters from the patient or the patient support.

Any person who connects external equipment to signal input, signal output, or other connectors has formed a system and is therefore responsible for the system to comply with the requirements of IEC 60601-1-1. If in doubt, speak with a qualified technician.

Safety tips

- Never open the display case, even when the power is off. Dangerous voltage inside may cause electric shock or death.
- To avoid damage to the display, use the grounded power supply and video cable supplied by Planar, or use certified replacements.
- Be sure the display is electrically grounded. You must connect the third grounding pin on the US power cord to a grounded outlet. The European power cord does not have a third grounding pin, but it must be plugged into a grounded outlet.
- If you cannot insert the plug into the outlet you plan to use, have a licensed electrician replace the outlet with a properly grounded outlet. If the power cord connects directly into the computer, make sure the computer is grounded.
- Keep the display dry if it is part of a surgical system. The display lacks protection against liquids or spills.
- **In locations where 240V outlets are used, connect the Dome E2c display only to a center-tapped, 240V, single-phase supply (only for Canada and the United States).**

GROUNDING RELIABILITY CAN ONLY BE ACHIEVED WHEN EQUIPMENT IS CONNECTED TO AN EQUIVALENT RECEPTACLE MARKED "HOSPITAL ONLY" OR "HOSPITAL GRADE."

Unpacking and handling tips

The Dome E2c display is a precision instrument that requires proper care to maintain product operation and adherence to specification. Unpack the display and components carefully, then set up and handle the unit properly to avoid damage to the LCD panel.

- Use both hands to grasp the display case when lifting it from the shipping carton, but avoid touching the screen.
- Do not apply pressure to the screen or touch the screen with bare fingers or objects. Pressure can affect image quality. Cosmetics and oils on the skin are both detrimental to the screen and difficult to remove.
- Allow the display to warm up to room temperature before turning it on. Avoid sudden temperature changes in the environment, as this may cause condensation, which damages the display.
- Secure the display properly onto a standard VESA 100-mm mounting unit if you elect not to use the desk stand.
- Do not set up the display near strong light or heat sources.
- Do not block the vents on the back of the display or install the display in a built-in enclosure. Blocked vents cause excessive heat to build up inside the display, increasing risk of fire.
- When installing components, turn off your computer, but leave it plugged into a grounded outlet.
- Do not remove the back cover or disassemble the display. There are no user-serviceable parts inside.

Preventing fire and injury

- Replace the power supply or cables if damaged.
- Use only the power source indicated in this guide or listed on the display.
- Do not plug the power supply into an overloaded AC outlet or extension cord. Overloaded AC outlets and cords can result in electric shock or fire.
- Do not drop or push objects into the display case. Internal components contain high voltage.
- Unplug the power cord from the wall outlet during thunderstorms.
- Do not place magnetic devices, such as motors, near the display.

Cleaning the display

Observe the following guidelines to maintain the display and the LCD screen.

- Use a clean, lint-free, absorbent cotton cloth to clear off any residual glue from removal of the protective film or to remove surface dust. Apply light pressure to remove the dust.
- Dampen a clean cloth with a small amount of isopropyl alcohol to remove glue or dust if the screen is still not clean. Do not saturate the cloth; otherwise, alcohol may seep into the display case and collect in the enclosure. Use a clean, dry cloth to completely remove the alcohol residue.
- Do not use chemically treated dust cloths, acetone, toluene, or harsh solvents on the display case or the screen. They can damage the polarizer and the display case.
- Do not expose the display to water or excessive moisture. Do not allow water or other stains to stand on the unit. Wipe liquids off immediately to prevent damage to the display case and the screen.

WARNING
DISCONNECT SUPPLY BEFORE SERVICING

AVERTISSEMENT
COUPER L'ALIMENTATION AVANT L'ENTRETIEN ET LE DEPANNAGE

Shipping/storing the display

Keep the display in its shipping container until installation. Return the display to its original container whenever you need to store the unit, move it to another location, or return it for repair. The packaging supplied by the manufacturer protects the display while it is in transit. See environment specifications for more information.

Before returning the display to the container, do the following:

- 1 Swivel the display panel in landscape mode.
- 2 Push the panel down to the lowest position.
- 3 Use the stand lock to anchor the panel.

Disposal information

Follow your local governing ordinance and recycling policy for proper disposal or recycling of display components.



AMLCD panel mounted on desk stand



Display controller



DC power adapter



Power cords



DVI cable



Quick reference



Display driver and calibration software

Also included: Composite video, S-video, and VGA cables

About the Display

The Dome E2c display system offers a 541-mm (21.3-in) color UXGA 1200x1600 AMLCD unit with a luminance output of 500 nits minimum. The display connects directly to a controller board via a Digital Visual Interface 1.0 interface. With AMLCD modules delivering 2-megapixel resolutions, the display's thin film transistors operate in a transmissive-type display using an integrated cold cathode fluorescent tube (CCFT) high-bright backlight system.

This display is designed for medical imaging in diagnostic settings, in portrait or landscape orientation. The unit produces 24-bit data per pixels and comes fully tuned with gamma correction that complies with the DICOM Part 14 Standard.

Bundled with the display system, the Dome CXtra software enhances the functionality of the Dome E2c display with a range of value-added services, such as DICOM calibration, error reporting, and backlight saver. Network management of Dome displays running the Dome CXtra software requires the Enterprise Management Service for Dome CXtra. For more information, refer to Dome CXtra User's Guide.

System Requirements

- Intel Pentium 4/Xeon; AMD Athlon 64/K7/XP or compatible
- PCI Express x16 lane slot
- 50 MB hard disk space
- 256 MB RAM
- CD-ROM drive
- Power supply, 350 watts or greater
- Windows XP Service Pack 2 or Windows 2000 Service Pack 4

Display Components

Review this illustration of the back panel to identify controls and ports on the display unit.







Legend

- 1 Reset. Restores the display configuration to default.
- 2 LED. Shows display status.
- 3 DIN 8-pin connector. Drives power to the display.
- 4 S-Video, separate video analog input port. Requires a 4-pin mini-DIN connector.
- 5 C-Video, composite video analog input port. Requires an RCA or phono connector.
- 6 DVI. DVI-I video input port. Supports DVI-D digital or VDVI-A analog video. Requires DVI connector.
- 7 VGA. VGA video analog input port. Requires an HD15 D-Sub or VGA connector.

Display Positions

You can adjust the tilt, height, viewing angle, and orientation of the display to maintain an ergonomic and comfortable viewing position. Make sure that your eyes are level with the top of the display cabinet so that you look downward to read the screen contents. Select a suitable workspace for the display. You need a stable, level, and clean surface near a wall outlet.

Tilt range	Height range
 <p data-bbox="300 720 645 839">Adjust the tilt angle of the display so that the screen faces slightly down-ward from your angle of view.</p>	 <p data-bbox="683 720 1027 839">Unfasten the stand lock at the top of the desk stand (slide it to the left) then raise or lower the panel to adjust the height.</p>
Viewing angle	Orientation mode
 <p data-bbox="300 1198 625 1285">Swivel the display panel from side to side to adjust the viewing angle.</p>	 <p data-bbox="683 1198 1004 1316">Use both hands to turn the display 90 degrees counter-clockwise to move from portrait to landscape modes.</p>

Desk Stand Features

Unfasten the stand lock to adjust display height. Remove the stand cover to thread the power cord and DVI cable connections to the display. To activate the USB hub function, the display must be connected to a USB-compliant computer or another hub with a USB cable. Even if the display is in power-saving mode, the USB devices function when connected to the USB ports of the display.

Stand height lock



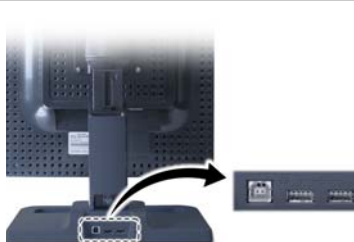
Move the stand lock lever to the left to adjust the height of the display.

Stand cable cover



Press the PUSH button at the bottom of the desk stand and pull the stand cable cover down and out to remove it.

USB hub



Use the integrated, bus-powered USB hub to attach USB devices to the display rather than to the computer.

Installing the Display

Before you install the display controller, remove any existing graphics card and its driver from your system. Also disable any onboard graphics capability on the motherboard.

Warning

- **In locations where 240V outlets are used, connect the Dome E2c display only to a center-tapped, 240V, single-phase supply (only for Canada and the United States).**
- Turn off the computer before installations. If you leave the computer on, you could suffer electric shock or cause damage to system components.
- Remove the display controller slowly from its package and static-shielding bag to prevent electrostatic discharge.
- Static electricity can damage the controller. When touching the board or parts of the motherboard, take these precautions:
 - Wear an antistatic wrist strap.
 - Discharge your body's static electricity repeatedly by touching the power supply or the metal surface of the computer chassis.

Tips

- **Access to ports.** For displays mounted on a desk stand, rotate the LCD panel from portrait to landscape for access to the ports.
- **Threading cables.** Remove the stand cover and thread the DVI cable and power cord through the stand column. Make sure the cable and cord run inside the notches. To reattach the cover, align the hooks with the slots on the stand. Press the cover into place. A click sound signals a secure connection.
- **Multiple displays.** Connect the first display of a two-headed system, or the only display of a one-headed system, to the Video 1 port. Connect all displays to the controller before you turn on the computer and install the driver. Use two displays to view two images simultaneously or one image across both displays.

Install the Display Controller

Before you install the display controller, make sure your display system will be set up in a well-ventilated location with an adequate amount of space. Excessive heat cannot dissipate when display vents are blocked.

Turn off your computer and peripherals. Disconnect all the cables. Leave the power cord plugged into the grounded outlet.

If you are installing multiple display controllers, install all boards before you install the display driver.

To install the display controller

- 1 Remove the computer cover and then the blank bracket from the available PCI Express slot.
- 2 Insert the display controller into the slot, align the connector pins, and press the board down until it is firmly seated.
- 3 Secure the mounting bracket, and reattach the computer cover and the peripherals.

Note

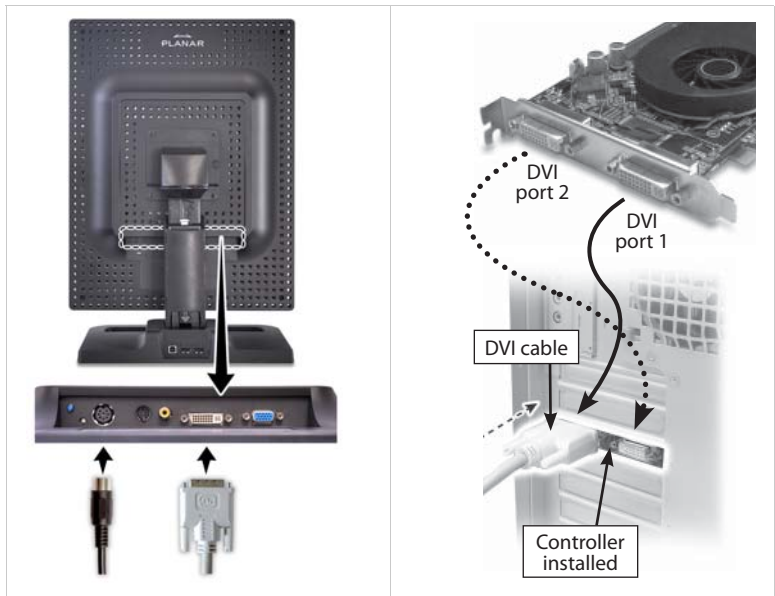
Diagnosis requiring DICOM calibration with the Dome CXtra software can only be supported on the DVI-D interface.

Connect the Video and Power Cables

Use only the power adapter (Ault MW122KA1223F52), power cord, and the video cable shipped with the Dome E2c display.

To connect the cables

- 1 Plug one end of the DVI cable into the DVI port on the connector plate. Secure the connection.
- 2 Plug the power cord into the power input port on the plate.
- 3 Plug the other end of the DVI cable into the video port on the installed display controller. Secure the connection. (Use Video 1 port for the first display of a dual setup or for a single display.)
- 4 Plug the other end of the power cord into the power adapter, and then connect the power adapter to a grounded AC outlet.
- 5 Repeat steps 1 to 4 to connect a second display to the controller.
- 6 Power on the display first, then the computer.



Install the Display Driver

Upon restarting your computer system, you must log on with administrator privileges. On Windows 2000 systems, Service Pack 4 or higher must be installed.

To install the driver

- 1 Start the system. Click Cancel on the Found New Hardware Wizard. Click No when the system prompts you restart the computer.
- 2 Insert the driver installation CD and run setup.exe.
- 3 Click Next.
- 4 Click Yes to the license agreement. The installation starts.
- 5 Follow the onscreen instructions to complete the installation. Planar recommends that you select the Express installation option.
- 6 When the Setup Complete message appears, select Yes, I want to restart my computer now, and click Finish.

To configure the display

- 1 Right-click the desktop and select Properties > Settings.
- 2 Use the native resolution of the display.
- 3 Click OK.

Adjust Display Properties

Use the Display Properties dialog to make changes to the video settings or to set up a dual-display configuration.

To set the display orientation

- 1 Right-click the desktop and select Properties > Settings.
- 2 Select the monitor that you want to change. Then click Advanced.
- 3 Click the Monitor tab. Make sure that the check box for Hide modes that this monitor cannot display is empty (unchecked).
- 4 Click the Rotation tab.
 - > Check Standard landscape for landscape mode.
 - > Check Rotate 90 Left or Right for portrait mode.
- 5 Click Yes to save the setting. Then click OK until you return to the desktop.

To use a dual-display configuration

- 1 Right-click the desktop and select Properties > Settings.
- 2 Click the monitor icon 2. Then select Extend my Windows desktop onto this monitor.
- 3 Set the resolution and color quality for the second display.
- 4 Click Apply or OK.

To set brightness

You can change the brightness of the Dome E2c display using the Display Properties dialog of the Windows operating system. However, when DICOM auto-calibration is running, you must control display brightness via the Dome CXtra software.

| Appendix

Troubleshooting

Specification

Video Modes

Video Timing

Connector Ports

LED Status Lights

Component Removal

Power Management

Troubleshooting

Problem	Possible Cause	Solution
No image appears on the screen	Computer is not powered on.	Turn on computer.
	Power cord is not securely connected.	Tighten power cord connection and turn on computer.
	Video cable connected incorrectly.	Make sure the first display of a dual-headed system or the only display of a single-headed system is connected to the Video 1 port on the display controller.
Conflict with driver version	A previous version of the display driver is still installed on the computer system.	Remove any existing display driver before you install a more recent version.
	The installation CD contains a file older than the one currently on your system.	The Confirm File Replace dialog box appears if the installation CD contains a file older than the one currently on your system. Click No to the question Overwrite the newer file? or click No to All.

Specification

In locations where 240V outlets are used, connect the Dome E2c display only to a center-tapped, 240V, single-phase supply (only for Canada and the United States).

Category	Characteristic Item	Specification
Screen	Screen size diagonal	541 mm (21.3 in.)
	Native resolution	1200 x 1600 pixels (portrait & landscape)
	Colors supported	16M colors, 24 bit
	Refresh rate	60 Hz
	Contrast ratio	900:1 (typical)
	Brightness	500 cd/m ² minimum
	Viewing angle	178° (± 89°) horizontal/vertical
Interface	Digital Video In	DVI-D Rev. 1.0 single-channel connector
	Analog Video In	DVI-A or VGA; S-Video, Composite Video
	Display control, brightness/contrast	DDC2B+
	Display identification	EDID 1.3 read using DDC2B+
	USB hub	Universal Serial Bus (USB) Rev. 1.1: 1 uplink B port; 2 downlink A ports
	Display status	Bicolor LED on connector plate
Input Formats	Landscape orientation	1600 x 1200
	Portrait orientation	1200 x 1600
	VGA/SVGA/XGA/SXGA	640 x 480 to 1280 x 1024 displayed in both landscape and portrait rotations
	S-Video & Composite modes	NTSC, PAL, SOG
	Screen type	AMLCD (active matrix liquid crystal display)
Physical	Display size (without stand)	483 mm x 375 mm x 112 mm (19.0 in. x 14.8 in. x 4.4 in.)
	Display weight (without stand)	5.44 kg (12 lb)
	Mounting options	Desktop stand with integrated USB hub (standard); 100-mm VESA mounting (optional)
Power Requirements	Input voltage	+12 V ±5%
	Power consumption	120 Watts maximum

Power Supply

CAUTION: Use only the power adapter supplied with the Dome E2c display unit; Ault MW122KA1223F52.

Category	Characteristic Item	Specification
Power input requirements	Voltage selection	Auto-ranging
	Voltage	100 – 240V AC
	Current	2.0 A
	Frequency	50 to 60 Hz
Power output requirements	Voltage	12 V DC \pm 5%
	Current	10.0 A (120 W)
Physical	Size	228.6 mm x 76.2 mm x 50.8 mm (9 in x 3 in x 2 in)
	Weight	1.3 kg (2.75 lb)

Reliability

Characteristic item	Specification
Display	MTBF >50,000 hours
Backlight	MTBF >40,000 hours

Environment

Characteristic item	Specification	
EMI shielding	No emission of low-level radiation	
Temperature	operating	5° C to 40° C
	storage	-20° to 60° C
Humidity	operating	20% to 90% Relative Humidity (non-condensing)
	storage	<70% Relative Humidity (non-condensing)

Video Modes

Resolutions expressed in pixels (W x H). Single desktop requires dual displays.

Display	Resolution	Orientation	Palette	Bits per pixel
Dome E2c	1200 x 1600 1600 x 1200	Portrait Landscape	True color	32

Video Timing

Standard	Resolution	Vertical Refresh (Hz)	Horizontal Scan (Khz)
IBM VGA	640x350	70	31.5
IBM VGA	640x480	60	31.5
IBM VGA	720x400	70	31.5
VESA VGA	640x480	72	37.9
VESA VGA	640x480	75	37.5
VESA VGA	640x480	85	43.3
VESA SVGA	800x600	56	35.1
VESA SVGA	800x600	60	37.9
VESA SVGA	800x600	72	48.1
VESA SVGA	800x600	75	46.9
VESA SVGA	800x600	85	53.7
VESA XGA	1024x768	60	48.4
VESA XGA	1024x768	70	56.5
VESA XGA	1024x768	75	60.0
VESA XGA	1024x768	85	68.7
VESA	1152x864	75	67.5
VESA SXGA	1280x1024	60	64.0
VESA SXGA	1280x1024	75	80.0
VESA SXGA	1280x1024	85	91.1
VESA UXGA	1600x1200	60	75.0
Apple Mac LC	640x480	67	34.9
Apple Mac II	640x480	67	35.0
Apple Mac	832x624	75	49.7
Apple Mac	1024x768	75	60.2
Sun Micro	1152x900	66	61.8
Sun Micro	1152x900	76	71.1

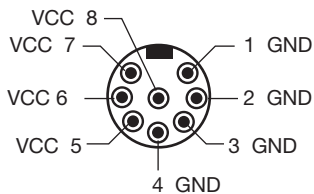
Connector Ports

The video signal connector is a standard DVI connector, driving data to the display. Diagnosis requiring DICOM calibration with the Dome CXtra software can only be supported on the DVI-D interface.

The Dome E2c display use an 8-pin DIN connector. The power input is 12V \pm 5% (120 W). See below for details of the DIN connector.



Input power port on connector plate



Assignments on 8-pin DIN connector

LED Indication Lights

The LED indicator on the connector plate provides information on the display status.



LED Indication	Description
Solid green	Operating with signals
Flashing green	Operating without signals
Solid yellow	Fault condition
Flashing yellow	Testing/Loading
Dark	OFF/No power

Display Driver Removal

Follow the appropriate procedure below to remove the driver from your system.

To remove the driver

- 1 Close all applications that are running.
- 2 Navigate to the Control Panel and select Add/Remove Programs.
- 3 Select your current graphics card drivers and select Add/Remove. Follow the wizard to remove your current display drivers.
- 4 Restart your system.

Power Management

You have two ways to lower energy usage when the Dome E2c display is idle:

- Dome CXtra Backlight Saver service (preferred)
- Screen Saver (set via Windows operating system)

Activate the power saver when you anticipate periods of inactivity, such as at the end of the work day. Once activated, Backlight Saver (or Screen Saver) automatically turns the backlight off during the period of inactivity. Backlight Saver and Screen Saver both extend the life of the backlight and reduce burn-in of images.

Do not use the Backlight Saver and Screen Saver concurrently.

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Regulatory Compliance

Canada, European Union, United States

This display has been tested and found to comply with IEC/EN 60601-1 and IEC/EN 60601-1-2 standards, and is certified to meet medical standard C22.2 No. 601.1-M1990 (C US Mark).

The medical display, in addition to meeting medical requirements, has been tested and found to comply with the limits for Federal Communications Commission (FCC) Class B computing devices in a typically configured system since many medical offices are located in residential areas. It is the system integrator's responsibility to test and ensure that the entire system complies with applicable electromagnetic compatibility (EMC) laws.

Planar Systems, Inc. has made great efforts to support the medical device industry, in particular, medical device manufacturers and medical device system integrators. We offer state-of-the-art color displays that are compliant with worldwide accepted medical device safety standards, and for the European market, CE-marked displays based on compliance with council directive 93/42/EEC—commonly referred to as the Medical Device Directive (MDD). The following summarizes our qualification of these displays as it relates to compliance with the MDD.

The European Medical Device Directive requires that the intended use of the device be defined. The intended use of these displays is “to display alphanumeric, graphic, and image data as inputted from any type of medical device.” These displays do not provide a measurement function in any way, and it is the device and systems manufacturer's responsibility to verify its function in the integrated device or system.

The display was classified as required by the MDD according to Annex IX of the directive and the medical device (MEDDEV) guidance available at the time of classification. Because the display uses electrical energy and has no direct patient connections and—by itself—no medical utility, the display is classified according to Rule 12 as an MDD Class I device, component, or accessory. The MDD states that manufacturers of Class I medical devices or accessories shall satisfy the requirements in regard to design and manufacturing controls, that is, the applicable assessment route to be used for CE-marking under the MDD, and it shall carry the CE mark according to Annex XII of the directive, with no notified body annotation.



The applicable safety standards for an MDD Class I display are IEC/EN 60601-1:1990 along with Amendments 1 and 2. To help the medical device designer evaluate the suitability of these displays, Planar has also conducted EMC testing to IEC 60601-1-2 as it can be applied. The display with its power supply alone does not represent a functional medical device. Hence, Planar configured a minimal operating system to exercise the display. The resulting data are made available to interested parties.

This is informative data, not certification data. Certification data must be obtained by the device or system integrator according to Article 12 of the MDD titled "Particular procedure for systems and procedure packs." Paragraph 2 clearly outlines the device or system integrator's responsibility in this matter.

In summary, Planar Systems, Inc. is CE-marking these displays under the Medical Device Directive, which establishes compliance to the basic medical safety standards. However, EMC compliance can only be accomplished in the configured medical device or system and is the responsibility of the device or system manufacturer. Planar has the necessary documentation such as IEC 60601-1 notified body and other third-party test reports and certifications, a risk/hazard analysis, an essential requirements checklist, and the Planar International Electrotechnical Commission (IEC) declaration of conformity.

Planar Systems, Inc., located in Beaverton, Oregon, USA, is the manufacturer of these displays in the meaning of the directive. As required by the MDD in Article 14, Planar Systems, Inc., not residing in the European Economic Area (EEA), has a European representative, Planar Systems, Inc.—Olarinluoma 9, P. O. Box 46, FIN-02201 Espoo, Finland (phone + 358 9 420 01; fax + 358 9 420 0200).

In the opinion of Planar Systems, Inc. registration required to put this device into commerce is the responsibility of the medical device/system manufacturer, and Planar supports this requirement by providing a European Commission (EC) declaration of conformity. If Planar supplies a display to an end user, rather than a device manufacturer, it is the end user's responsibility to ensure continued compliance with the MDD of the system in which the display is integrated.

The supplier will make available on request, circuit diagrams, component part lists, etc.

For vigilance reporting as required under Article 10 of the MDD, Planar Systems, Inc. will provide any information requested by competent authority to support any reported incident investigation by such an authority.

EU Declaration of Conformity for Medical Application

A Declaration of Conformity has been filed for this product. For additional copies of the Declaration of Conformity document, contact Planar Systems.

The Dome EX digital flat-panel display meets the essential health and safety requirements, is in conformity with, and the CE marking has been applied according to the relevant EU Directives listed below, using the relevant section of the following EU standards and other normative documents;

EU EMC Directive 89/336/EEC

EU Electromagnetic Compatibility Directive

EN 60601-1-2 (2001) Section 1.2. Collateral standard electromagnetic compatibility requirements
Medical Electrical Equipment

EN 55011 (Class B) Limits and methods of measurements for radio interference characteristics of industrial, scientific, and medical equipment

IEC 1000-3-2 Harmonic emissions

IEC 1000-3-3 Voltage fluctuations/flicker emissions

IEC 1000-4-2 Electrostatic discharge requirements for industrial process measurement and control equipment

IEC 1000-4-3 Radiated electromagnetic field requirements for industrial process measurement and control equipment

IEC 1000-4-4 Electrically fast transients for industrial process measurement and control equipment

IEC 1000-4-5 Surge requirements

IEC 1000-4-11 Voltage variations/dips/interrupts

IEC 1000-4-6 Conducted immunity

IEC 1000-4-8 Magnetic field immunity



Conformance to the Medical Device Directive 93/42/EEC

EN 60601-1 Medical Part 1: General requirements for safety
Electrical Equipment

U.S. FCC Compliance Statement

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technical for help.

CAUTION: Changes or modifications to this equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Australian

C-Tick Australian Communications Authority regulating product EMC compliance.

China

CCC China Compulsory Certification regulating safety and EMC.

GB4943-2001

GB9254-1998 (Class A)

CB17625.1-2003

Japan

VCCI Voluntary Control Council for Interference by information technology equipment sold in Japan.

Korea

MIC Mark Ministry of Information and Communications.

Standard Warranty

Summary

- Standard 1-year “repair and return” warranty
- A 2-year backlight warranty on color displays*
- Typical repair turnaround time of 10 business days

Standard Warranty Return Procedure

As a Planar Standard Warranty customer, you must follow the procedure below if you have a non-functioning Dome EX display. The Planar customer service staff will attempt to correct any minor issues that may be causing the problem. Once Planar has determined that you have a non-functioning product, Planar will arrange for return and repair of the non-functioning product.

- 1 Contact Planar via the web at <http://www.planar.com/support>. In North America, call (866) PLANAR1 (866.752.6271). In Europe, call +358 9 420 01 or send your info by fax to +358 9 420 0200. Have the model number, serial number, and proof-of-purchase available.
- 2 Planar customer service staff will attempt to correct any minor issues that may be causing the problem. If we are unable to correct the problem to your satisfaction, we will issue a Return Material Authorization (RMA).
- 3 You must return the product, as specified, to Planar Systems. Planar will validate the defect, repair the unit, and return the unit to you. The typical turnaround time is 10 business days.

* If, within 2 years of initial purchase, the maximum output of the Dome E2c display is determined by Planar Systems to be less than 250 cd/m², Planar will repair or replace the display at the its sole discretion.

Summary Limitations and Exclusions of Dome Displays

- 1 Customer must provide original proof of purchase of the display system.
- 2 Warranty is void on any product with a defaced, modified, or removed serial number.
- 3 Warranty is void on any product with damage, deterioration, or malfunction resulting from the following:
 - a) Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
 - b) Repair or attempted repair by anyone not authorized by Planar.
 - c) Any damage of the product due to shipment.
 - d) Removal or installation of the product.
 - e) Causes external to the product, such as electric power fluctuations or failure.
 - f) Use of supplies or parts not meeting Planar's specifications.
 - g) Normal wear and tear.
 - h) Any other cause, which does not relate to a product defect.
- 4 Warranty excludes removal, installation, and setup service charges.

Limitation of Implied Warranties

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION CONTAINED HEREIN INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Exclusion of Damages

THE LIABILITY OF PLANAR IS LIMITED TO THE COST OF REPAIR OR REPLACEMENT OF THE PRODUCT. PLANAR SHALL NOT BE LIABLE FOR THE FOLLOWING:

- 1 DAMAGE TO OTHER PROPERTY CAUSED BY ANY DEFECTS IN THE PRODUCT, DAMAGES BASED UPON INCONVENIENCE, LOSS OF USE OF THE PRODUCT, LOSS OF TIME, LOSS OF PROFITS, LOSS OF BUSINESS OPPORTUNITY, LOSS OF GOODWILL, INTERFERENCE WITH BUSINESS RELATIONSHIPS, OR OTHER COMMERCIAL LOSS, EVEN IF ADVISED OF THEIR POSSIBILITY OF SUCH DAMAGES.
- 2 ANY OTHER DAMAGES, WHETHER INCIDENTAL, INDIRECT, CONSEQUENTIAL OR OTHERWISE.
- 3 ANY CLAIM AGAINST THE CUSTOMER BY ANY OTHER PARTY.

Effect of Local Law

This warranty gives you specific legal rights, and you may have other rights, which vary from locality to locality. Some localities do not allow limitations on implied warranties and/or do not allow the exclusion of incidental or consequential damages, so the above limitations and exclusions may not apply to you.



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