Planar® Invitium™ Medical Workstation

Tk7 and Tn4 Operations Manual

Planar Systems, Inc.

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U.S. Federal Communications Commission (FCC) Requirements

This device was tested and complies 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 instructions, may cause harmful interference to radio communications.

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 the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

To comply with the limits for an FCC Class B computing device, always use the shielded signal cord supplied with this unit. The FCC warns that changes or modification of the unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Canadian Documentation Notice - Class B Computing Devices

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the Radio Interference Regulation of the Canadian Department of Communications.

"Le present appareil numerique n'emet pas de bruits radioelecinques depassant les limires applicables aux appareils numeriques de la class B prescrites dans le Reglement sure le brouiliage radioelectrique edicte par le minstere des Communications du Canada."

Regulatory Compliance

This system was tested and complies with IEC/EN 60601-1, UL 2601-1, and CAN/CSA C22.2 No. 601.1 medical safety standards. It is the system integrator or configurer's responsibility to test and ensure that the entire system complies with applicable electromagnetic compatibility (EMC) laws.

European Union Declaration of Conformity for Medical Applications

A Declaration of Conformity exists for this product. To obtain a copy contact Planar and request the "Declaration of Conformity" document number below.

- Tk7 – 001-0014-04
- Tn4 – 001-0014-09

Certifications

- IEC/EN 60601-1:1990 + A1 + A2 for sale to the medical market
- IEC 60601-1-2:2001 as it applies to this system (informative data)
- Underwriters Laboratory to medical standards UL 2601-1 and CAN/CSA C22.2 No. 601.1 M1990 for sale in the United States and Canada
- Carries the CE mark for sale in the European Community

Symbol Explanations

This information identifies and describes the symbols found on the Invitium.

CE	Proof of conformity to applicable European Economic Community Council directives and harmonized standards published in the official journal of the European Communities.
CLASSIFIED C UL US E 226863	UL 2601-1 CAN/CSA C22.2 NO.601.1 IEC 60601-1 Product is certified with respect to electric shock, fire, mechanical and other hazards only in accordance with US 2601-1 and CAN/CSA C22.2 No. 601.1 and IEC 60601-1 for medical equipment. If this mark appears with the indicators *C* and *US*, the product is certified for the United States and Canadian markets, meeting the applicable United States and Canadian standards.
FC	Tested to comply with FCC Class B standards.
⚠	Consult accompanying documents.
	Indoor use only.

Warranty Information

Planar Systems, Inc. warrants that the goods sold hereunder are free of defects in materials and workmanship, and such goods substantially conform to the specifications furnished by Planar and to any drawings or specifications furnished to Planar by the Buyer if approved by Planar. This warranty is effective only if Planar receives notice of such defect or nonconformance during the period of the warranty. Planar's sole and exclusive liability for breach of warranty shall be, at Planar's option, to repair or replace the Planar product(s) with refurbished units or provide a credit to buyer in the amount of the purchase price.

Commencement of warranty

The warranty period begins on the date of shipment.

Duration of warranty

The goods sold hereunder are warranted for a period of one year from the date of shipment unless otherwise agreed to by Buyer and Planar. No extension of the warranty will be given during the time the goods are in Planar's possession.

Place of repair or replacement

To obtain warranty service, Buyer must notify Planar of the defect before expiration of the warranty period and request a *Return Material Authorization* number. Return the product in its original configuration to obtain warranty service from Planar. Do not return goods to Planar without prior authorization. Buyer is responsible for packaging and shipping the defective goods to the Planar Service Facility located at Beaverton, Oregon, with shipping charges prepaid.

Limitation of warranty

The foregoing warranty shall not apply to defects resulting from (a) improper or inadequate maintenance by Buyer; (b) unauthorized modification of the goods; (c) operation of the goods outside of the environmental specifications of the goods; (d) neglect, misuse, or abuse of the goods; or (e) modifications or integration with other goods not covered by Planar's warranty when such modifications or integration increases the likelihood of damage to the goods.

The warranty is given by Planar in lieu of any other warranties, express or implied. Planar disclaims any implied warranties of merchantability or fitness for a particular purpose. Planar's responsibility to repair or replace defective products is the sole and exclusive remedy provided to the buyer for breach of this warranty. Planar is not liable for any indirect, special, incidental, or consequential damages irrespective of whether Planar has advance notice of the possibility of such damages.

Technical assistance

The warranty set forth above shall not be enlarged, diminished, or affected by, and no obligation or liability shall arise from Planar, any authorized dealer, or any other person's rendering of technical advice, assistance, or services in connection with the buyer's order of the goods furnished hereunder. The Buyer is not relying on Planar's skill or judgment to select or furnish suitable goods.

Installation

Planar makes no warranty with respect to any installation of Planar's product(s) by Planar, any authorized dealer, or any other person.

About This Manual

Read this manual before you unpack your Planar® Invitium™ medical workstation.

Chapter 1, Overview	Intended use, components, options, and mounting solutions
Chapter 2, Installing	Setting up and connecting
Chapter 3, Troubleshooting	Problem solving

Audience

This manual assumes you have experience installing and using computers. Refer technical issues to your Invitium vendor or system administrator.

Conventions

Symbol	Description
⚠	A caution that can prevent potential damage to hardware or software.
⚠	A warning that can prevent personal injury.

Related documentation

- *Invitium Quick Setup Guide*
- *Invitium Battery Pack Manual*
- *Invitium Specification Sheet*

Cleaning the Display

Drip protection is in accordance with the IPX1 rating defined in the IEC/EN60529 standard.

1. Dampen a soft cloth with an approved cleaning solution.
2. Wipe the screen lightly until no residue remains.

Note Do not spray cleaners directly on the screen.

Approved cleaning solutions

WexCide®	70% isopropyl alcohol
Ovation®	Green soap USP (United States Pharmacopoeia)
Fantastic®	Cidex® (2.4% glutaraldehyde solution)
Formula 409®	0.5% Chlorhexidine in 70% isopropyl alcohol
1.6% aqueous ammonia	Sodium Hypochlorite (bleach) 10%

Service and Support

There are no internal user-serviceable components. Return it to your Invitium vendor to maintain product warranty.

CHAPTER

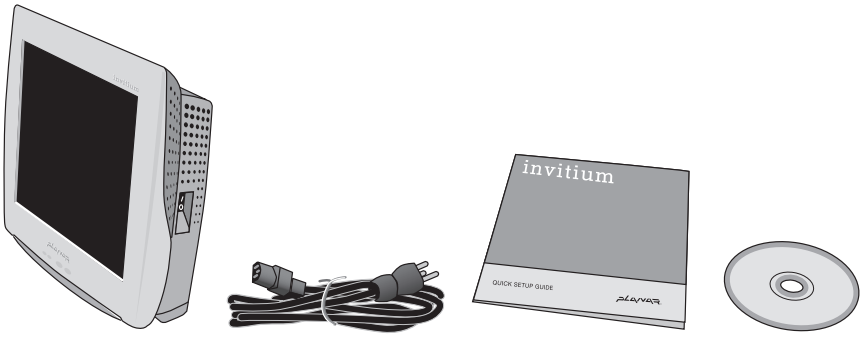
1 Overview

Your Planar® Invitium™ medical workstation is designed for point-of-care use in the medical environment. With appropriate cables and AC power adapter or battery pack, the Invitium complies with applicable safety and regulatory EMC standards worldwide.

The Invitium meets these requirements:

- Class I system under the MDD, intended for patient proximity use
- Medically certified for patient safety and proximity (UL 2601 and IEC 60601)
- Withstands high impact jarring, ingress of liquids, and hospital-grade disinfectants

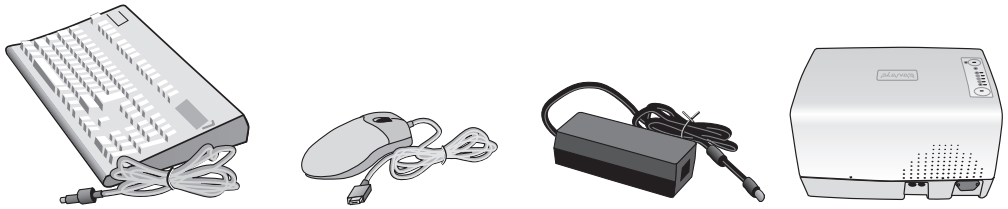
Standard Equipment



▲ Tk7 only

Note For specifications, refer to the *Invitium Specification Sheet* in the documentation kit or posted on www.planar.com.

Optional Equipment



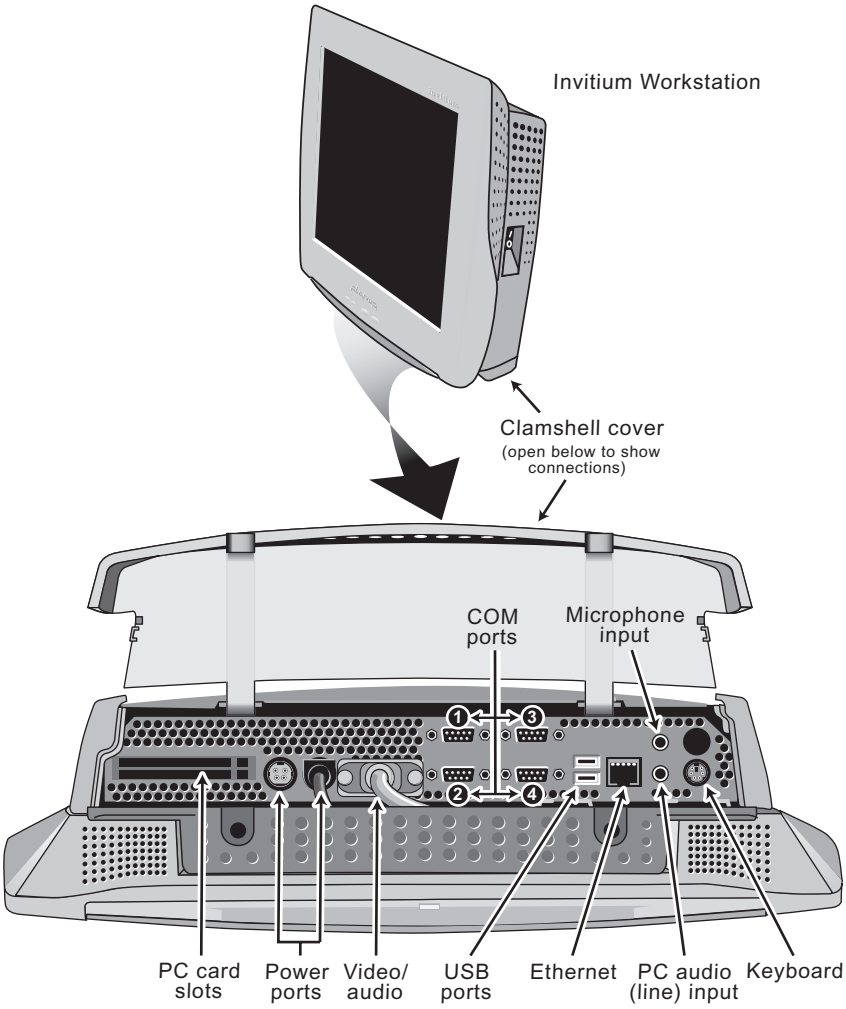
▲ USB or PS/2

Equipment	Description
Keyboard	PS/2 or USB-compliant keyboard.
Mouse	PS/2 or USB-compliant mouse.
Power Adapter	External, 12-volt, double-insulated power adapter works from 90 to 240 Vac at 50 to 60 Hz. Equipped with an IEC320 appliance coupler, attached power cable, and U.S. or European medical-grade 3 m power cable. Light-emitting diode (LED) indicates power. Input voltage range meets U.S. and European standards.
Battery Pack	Provides 8 hours of system operation at a nominal load of 48 watts. Refer to the *Invitium Battery Pack Manual*.
Touch screen	8-wire resistive touch screen (not shown).
Mounting Fixture[a]	Erogotron® mounting fixtures comply with the Video Electronics Standards Association (VESA) Flat Panel Monitor Physical Mounting Interface (FPMPMI™) standard.
Medical Cart[a]	Available individually, or as part of a packaged solution that includes the Invitium, battery, cart, and cables.

a. See page 5.

Workstation Configuration

The configuration for some models may differ slightly.



Central processing unit (CPU)

The Invitium uses convection cooling, in which internal thermal management directs heat to an array of cooling vents. Convection cooling eliminates noise and improves reliability.

There is no fan inside the CPU. CPUs with internal fans are unsuitable for the hospital environment because airborne contaminants can build up inside the fan and reduce cooling efficiency.

Supported Mounting Solutions

The VESA mounting plate on the Invitium allows the use of standard mounting hardware. VESA FPMPMI-compliant mounting solutions are available through Planar Systems, Inc. Contact your Invitium vendor or visit the Planar web site.

`www.planar.com/medical/medicalworkstation.asp`

▲ Desktop stand

▲ Vertical lift

▲ Wall mount

▲ Sample of medical carts

CHAPTER 2

Installing the Invitium

Guidelines

Operating

- Temperature – Operating: 32° to 104° Fahrenheit (0° (zero) to 40° Celcius)
  Storage: -4° to 149° Fahrenheit (-20° to 65° Celcius)
- Proper ventilation to allow sufficient airflow and heat dissipation

Mounting

- Supports 23 lb
- VESA-compatible, 75 mm or 100 mm pattern.
- Mounting hardware meets the Occupational Health and Safety Administration (OSHA), National Fire Protection Association (NFPA)

Precautions

- Secure all electrical cables. Replacement cables are available from Planar.
- Firmly grasp the Invitium with two hands and place it in its original packaging when moving it to a different location

Caution – Electrical and fire hazards.

- Install where the temperature range is 32° to 104° Fahrenheit (0° (zero) to 40° Celcius). Usage outside that range can damage the system.
- Plug the Invitium into a grounded power outlet to safeguard the system from power surges.
- Use only the supplied power adapter or battery pack. Other units may damage the Invitium.
- Disconnect the Invitium from its power source if it gets wet, cables are damaged, or if it falls. Contact your Invitium vendor.
- Do not block the vents on the back of the Invitium or install it in a built-in enclosure. Blocked vents cause excessive heat to build up inside the system.

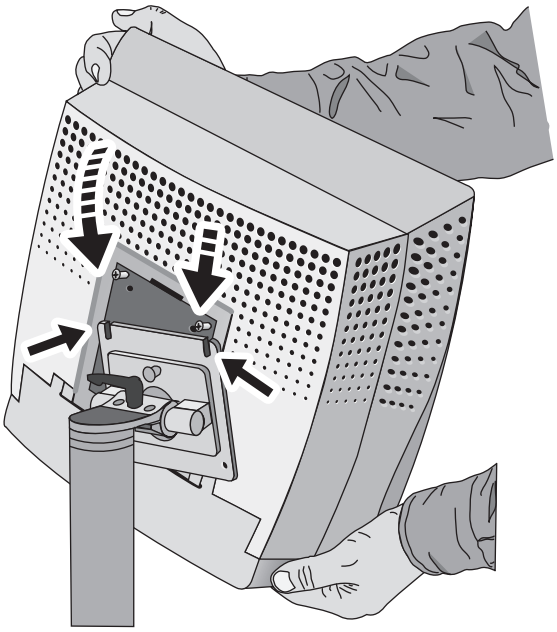
Warning – Personal injury.

Do not open the computer casing. There is dangerous voltage inside and risk of electrical shock. Contact your Invitium vendor for assistance.

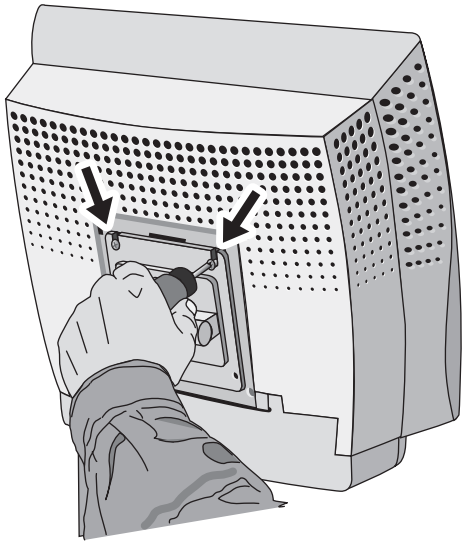
Attach the Mounting Fixture

Use four 4 mm 0.7 pitch stainless steel screws of the appropriate length for a tight fit. You need 4 mm of the screw's threads engaged in the Invitium's VESA plate for proper support.

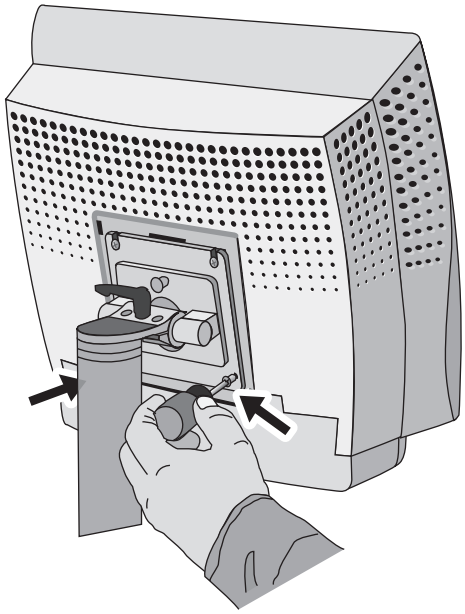
1. Install the mounting fixture. (Refer to the vendor documentation.)
2. Attach the Invitium to the fixture using the VESA panel on the back of the Invitium.
   - If the VESA panel on the fixture has slotted upper screw holes, secure the top two screws to the Invitium's VESA panel, and then slide the Invitium onto the fixture.
   - If the holes are not slotted, have another person support the Invitium against the fixture while you secure the screws.



3 Tighten the top two screws through the fixture's mounting plate.



4 Insert and tighten the bottom two screws through the mounting plate.



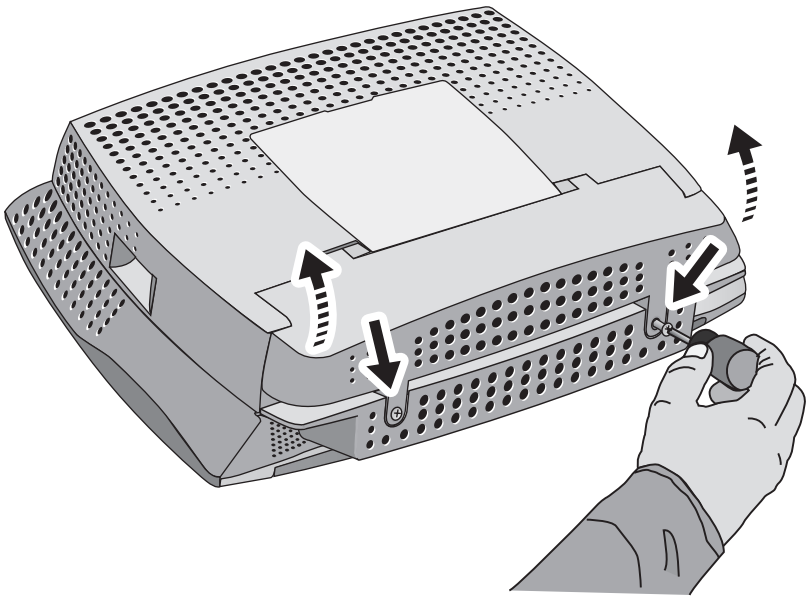
5 Open the clamshell and connect the cables.

Open the Clamshell

1 Tilt or rotate the Invitium away from the mounting fixture to allow the clamshell to open fully.

Note Accessing the connector bay differs depending on the mounting fixture.

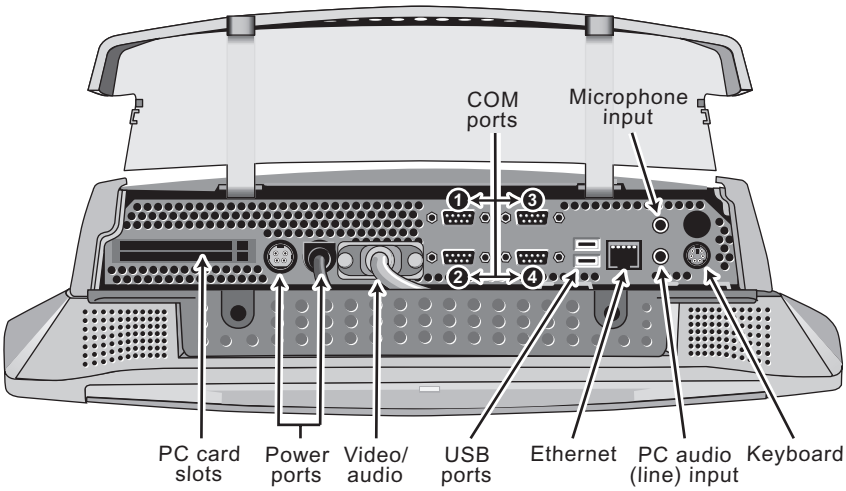
2 Loosen the screws on the portion of the clamshell located below the VESA mounting plate on the Invitium.



3 Open the clamshell and connect the cables.

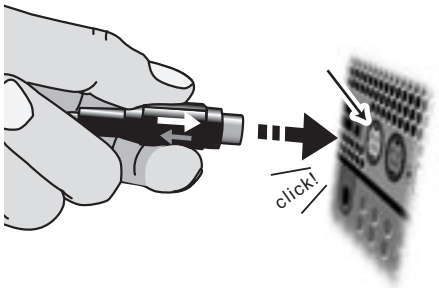
Connect the Cables

1 Connect the peripherals.



2 Connect the power adapter.

Align the pins on the DC connector with the holes in the power port and push into place. The connector clicks and locks into place.



3 Close the clamshell and fasten the screws.

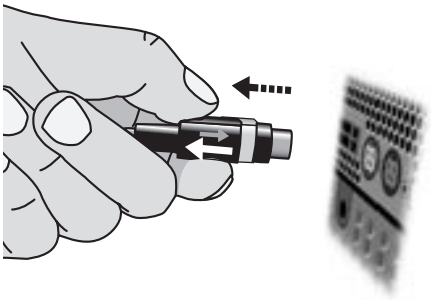
Caution – Electrical hazard.

PC audio is connected through the video / audio cable. Do not disconnect the video / audio cable or connect another display.

To disconnect the power adapter

1 Grasp the base of the DC connector and pull it back gently.

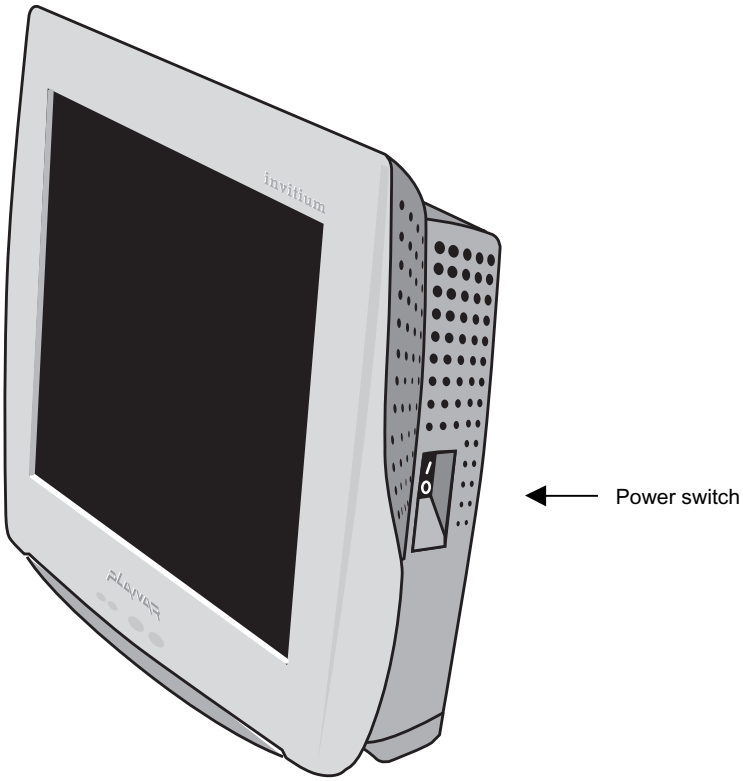
2 Keeping the base pulled back, tug the power adapter out.



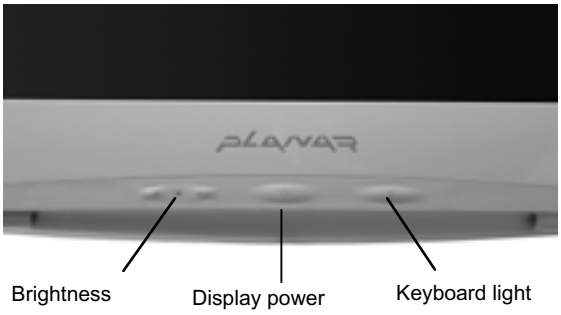
Caution – Hardware damage.
Do not pull the power adapter by the cable.

Start the Invitium

Press the power switch to the on (|) position.



Adjust the display



Brightness

Press the + or – control to adjust display brightness.

Display power

Press the display power button to toggle power on or off.

Keyboard light

Place the keyboard below the light to illuminate it.
The light turns off after 30 minutes.

Install Additional Software

The Invitium comes with the Windows operating system and drivers installed. You can customize the system configuration by installing additional software.

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Changes to the configuration are preserved on the flash disk. To assure compatibility, the software image can only be updated in its entirety.

Certified combinations of drivers and applications are available. Contact your Invitium vendor or visit www.planar.com.

Tk7

1. Attach an external drive to a USB port. (No driver is required for Windows 2000 or Windows XP.)
2. Install the software.

CHAPTER 3

Troubleshooting

Invitium does not start

1. Turn off the Invitium.
2. Wait 20 seconds.
3. Turn on the Invitium.

Invitium freezes or displays an error message

1. Turn off the Invitium and any connected peripherals.
2. Disconnect the peripherals, except the keyboard and mouse.
3. Plug the Invitium into a grounded power outlet.
4. Detach any external drives.
5. Turn on the Invitium.

Contact your Invitium vendor or system administrator for further assistance.

Problem Solving Tips

Problem	Action
Application software malfunctioning	• Check the software configuration. Refer to the software documentation. • Make sure the Invitium meets the minimum hardware requirements for the software. • Reinstall the software. • Restart the Invitium.
Cannot access Internet or Intranet	• Check the network configuration. • Use a different wall outlet • Make sure the power adapter is working. • Make sure the correct protocol is loaded. • Check for the correct IP address. • Check and secure the Ethernet cable to the Invitium and the wall outlet.
Intermittent problems, such as incorrect keyboard input	• Check and secure all cables. • Clean the keyboard. • Replace the existing power adapter with a Planar-approved one.
Flickering video display, unexpected system reboots, lack of system response	• Reinstall the software and restart the Invitium. • Install a surge suppressor to safeguard against power surges.
Prompt does not appear after system starts	• Check and secure all cables. • Check configuration settings in Setup. • Use the original power adapter or a new one supplied by Planar.

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