Honeywell

Honeywell Process Solutions

T3500 Honeywell Workstation

Planning, Installation, and Service Guide

EP-DPCX23
Release Independent
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Honeywell

Notices and Trademarks

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About This Document

This guide contains planning, installation and service information for the T3500 Honeywell workstation. The instructions and service information contained in this guide addresses the workstation, and assumes that associated network communication equipment is pre-installed by the Honeywell factory or has manuals dedicated to its installation and service. This workstation is not a standard Dell model and you cannot order it independently from Dell. The configuration rules defined in this document apply only to the Experion Tower configuration.

Release Information

Document Name	Document ID	Release	Part no
T3500 Honeywell Workstation Planning, Installation, and Service Guide - pisg3500	EP-DPCX23	Release Independent	51154551-906

Revision Notes

The following table lists the details of revisions of this document.

Revision	Revision date	Revision Notes
A		Initial Issue
B	06/2011	ECO P310057A
C	05/2012	Inserted Microsoft Windows 7 64-bit operating system support.
D	06/2012	ECN 2012-1425

References

The following list identifies all the documents that may be sources of reference for the material discussed in this publication.

Document Title

Document Title
Experion PKS Users
Experion PKS Overview
Experion PKS Software Installation and Upgrade Guide
Server and Client Planning Guide
Server and Client Configuration Guide (for Experion PKS)
Experion PKS Operators Guide
FTE Users
Fault Tolerant Ethernet Installation and Service Guide

Symbol Definitions

The following table lists those symbols used in this document to denote certain conditions.

Symbol	Definition
	**ATTENTION:** Identifies information that requires special consideration.
	**TIP:** Identifies advice or hints for the user, often in terms of performing a task.
	**REFERENCE -EXTERNAL:** Identifies an additional source of information outside of the bookset.
	**REFERENCE - INTERNAL:** Identifies an additional source of information within the bookset.
CAUTION	Indicates a situation which, if not avoided, may result in equipment or work (data) on the system being damaged or lost, or may result in the inability to properly operate the process.

Symbol	Definition
	**CAUTION**: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. **CAUTION** symbol on the equipment refers the user to the product manual for additional information. The symbol appears next to required information in the manual.
	**WARNING**: Indicates a potentially hazardous situation, which, if not avoided, could result in serious injury or death. **WARNING** symbol on the equipment refers the user to the product manual for additional information. The symbol appears next to required information in the manual.
	**WARNING, Risk of electrical shock**: Potential shock hazard where HAZARDOUS LIVE voltages greater than 30 Vrms, 42.4 Vpeak, or 60 VDC may be accessible.
	**ESD HAZARD:** Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices.
	**Protective Earth (PE) terminal**: Provided for connection of the protective earth (green or green/yellow) supply system conductor.
	**Functional earth terminal**: Used for non-safety purposes such as noise immunity improvement. NOTE: This connection shall be bonded to Protective Earth at the source of supply in accordance with national local electrical code requirements.
	**Earth Ground**: **Functional earth connection.** NOTE: This connection shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.
	**Chassis Ground**: Identifies a connection to the chassis or frame of the equipment shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.

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1. Planning

1.1 Introduction

About T3500 Honeywell workstation

Workstation platforms sold by Honeywell are engineered for the process control mission of Experion systems to provide consistent and robust performance. Through an extensive qualification process, Honeywell defines specific peripheral devices, slot locations, and BIOS settings for the best performance and reliability, sometimes even adding cooling fans for longer service. The computer manufacturer then builds Dell workstation to Honeywell specifications.

Honeywell engineering has tested the T3500 Honeywell workstation with other Honeywell hardware and software and has qualified its use for specific configurations as identified in the Software Change Notice (SCN). This workstation is not a standard Dell model and cannot be ordered independently from Dell. The Technical Assistance Center (TAC) is trained on and fully supports Honeywell workstations. Use of any other workstation, including a similar Dell model, is considered a project special and its TAC support is limited according to the services policy.

This release of workstation is based on the Peripheral Component Interconnect (PCI) bus, PCI Express, and/or USB 1.1/2.0 protocols. All mass storage and removable media devices (except for the floppy drive) are connected through the SATA, SATA II 3.0, or USB. There is one SATA interconnection for the CDRW/DVDRW (±) drive.

The T3500 platform provides a 1GB 1333MHz ECC dual channel unbuffered DDR3 SDRAM memory, which can be expandable to 4GB. However, systems shipped from May 2012 onwards provide 4GB (2x2GB) UDIMM as a standard memory configuration.

There are no cache memory options. The standard mass storage for this platform is 320GB/ 500GB advanced format drive or larger SATA 7.2K RPM hard drive. The standard display option for this platform is one Nvidia Quadro NVS 295 dual display controller. The model numbers for this platform are structured to include the Dell USB QWERTY keyboard and mouse with the platform.

Software requirements

The workstation runs on Microsoft Windows XP 32-bit embedded operating system or Microsoft Windows 7 Professional 32-bit, Microsoft Windows 7 Professional 64-bit operating system for Experion R4xx release. Refer to the latest SCN for software applications that are qualified for use on the T3500 Honeywell workstation.

BIOS configuration

The T3500 Honeywell workstation must have BIOS version C52 or later.

1.2 Description

T3500 Honeywell workstation model number

This user's guide applies to the Honeywell workstation identified in the following table.

Model number	Description	Part Number
MZ-PCWS03	T3500 Honeywell Workstation	51154551-100
EP-COAWNX	Microsoft Windows XP 32-bit Certificate of Authentication	-
EP-COAWN7	Microsoft Windows 7 Professional 32-bit and Microsoft Windows 7 Professional 64-bit Certificate of Authentication	-

Figure 1-1 Honeywell workstation front view

Honeywell logo

The T3500 Honeywell workstation is supplied with a Honeywell logo with the part number 51153722-100.

Furniture options

You can place the T3500 Honeywell workstation vertically, and is supported only for the tower configuration.

System board

The following picture shows the system board components.

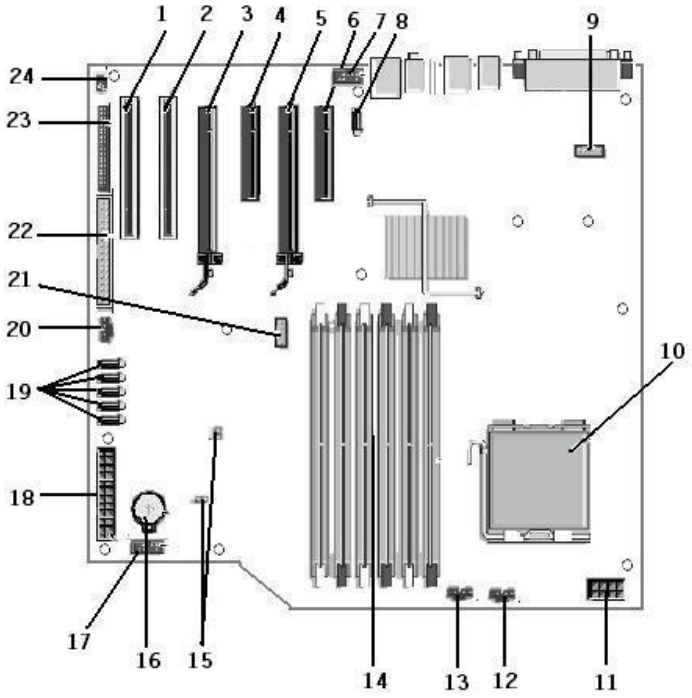


Figure 1-2 T3500 Workstation system board

No	Description
1	PCI card slot 6
2	PCI card slot 5
3	PCIe x16 slot 4
4	PCIe x4 slot 3
5	PCIe x16 slot 2
6	PCIe x4 slot 1
7	Audio Front Panel (FP_AUDIO))
8	Internal USB (USB_1)
9	LPC_DEBUG
10	Processor Connector
11	CPU Power Connector(POWER_CPU)
12	Front Bezel Fan (FAN_Front)
13	Front Cage Fan (FAN_CCAG)
14	Memory Module (RAM) Connectors(DIMM_1-6)
15	Jumpers (PSWD & RTCRTS)
16	Battery Socket (CMOS Battery)
17	Internal USB Socket (for Flexbay Card Reader)
18	Main Power Connector
19	SATA Connectors (SATA_0-4)
20	HDD Fan (FAN_HDD)
21	Serial Connector (SERIAL2)
22	FDD Connector
23	Front Panel Connector (FRONTPANEL)
24	Chassis Intrusion Connector (INTRUDER)

Features

The following is a list of the common features of this workstation.

- Single Quad-core Intel® 2.80 GHz minimum XEON® W3530 processor, 4.8GT/s QPI
- 8MB Shared L3 Cache
- One serial port
- One DB25 parallel port
- Eleven USB 2.0 ports
  - Two in the front
  - Six at the back
  - Three inside the workstation
- Two PS/2 ports
- PCI/PCIE slots
  - Two PCIE x16 Gen2 Graphics slot
  - Two PCIE x 8 wired as x4(half length)
  - Two PCI 32-bit/33 MHz PCI slot(half- length)
- Integrated high definition digital audio controller
- Integrated Broadcom 5761 Gigabit Ethernet controller
- Dual port Ethernet controller (optional)
- 525 Watts power factor correcting power supply (auto-ranging)
- 1GB (1x1GB), 1333MHz DDR3 UDIMM ECC or 4GB (2x2GB), 1333MHz DDR3 UDIMM ECC.
- SATA CDRW/DVDRW(±) Dual layer drive with Sonic Record Now Software
- Serial ATA 320GB or 500GB advanced format drive hard drive or more
- Nvidia Quadro NVS295 dual video controller, 256MB video BIOS version 62.98.75.00.07 or higher
- Lead Free – RoHS compliant

Additional components

The following is a list of additional components which can be mounted in the T3500 Honeywell workstation.

Table 1-1 Additional components

Model no	Description
NE-NICSS1	card, single NIC PCIE, server
NE-NICS02	NIC card, PCIE dual port stp
320-7899	Nvidia Quadro NVS295 Dual Video Card (256 MB) – PCI Express
MZ-PCEM11	1GB memory expansion (1 x 1GB), 1333MHz, DD3 UDIMM ECC
NE-NICS03	NIC card PCIE GB ET Chipset
MZ-PCEM14	2GB memory expansion (1 x 2GB) 1333MHz, DDR3, UDIMM ECC

1.3 Slot configuration

Dual video graphics is the default option provided with the T3500 Honeywell workstation. It includes both single and dual screen video capabilities. The following board configuration layout specifies the available system configurations. The Intel Pro 1000 PT PCIe based NIC Server adapter is supplied with Honeywell Configured Dell T3500 Workstation. In addition, it supports optional PCIE based NIC Intel Pro 1000 ET Dual port adapters. Use Slot-1 for Optional NIC adapters.

Experion systems

The following table describes the slot configuration for single and dual configuration Experion systems.

Table 1-2 Single or dual video

Slot No	Slot Type	Description
Slot-1	PCIex4	-
Slot 2	PCIEx16	Nvidia Quadro NVS295
Slot 3	PCIex4	-
Slot 4	PCIex16	-
Slot 5	PCI	-
Slot 6	PCI	Empty or Power Adapter Harness

FTE systems

The following table describes the slot configuration for single and dual screen FTE systems.

Table 1-3 FTE systems

Slot No	Slot Type	Description
Slot-1	PCIex4	Dual Port Intel Pro 1000 PT/ET Ethernet
Slot 2	PCIEx16	Nvidia Quadro NVS295 (256 MB)
Slot 3	PCIex4	-
Slot 4	PCIex16	-
Slot 5	PCI	-
Slot 6	PCI	Empty or Power Adapter Harness

Power cords

The following table lists the Honeywell AC power cords installed in the factory applicable to cabinet, tower mount configuration.

Table 1-4 Power cords

Model number	Description	Part No
	50Hz/240V and a Desktop (AC Power Cord, 220V)	51305557-100

MZ-PCWS03	60Hz/120V and a Desktop (CSA/CE/FCC LOGO).	51107941-113

Memory configurations

The standard memory installed in the T3500 Honeywell workstation is 1 GB (1x1GB). You can increase the memory size up to 4 GB. However, systems shipped from May 2012 onwards provide 4GB (2x2GB) UDIMM as a standard memory configuration.

Before increasing the memory size, ensure that the memory devices are from the same memory supplier and is installed in matched pairs. The label outside the shipping container identifies the capacity of the memory installed. The following table provides the additional memory components. This shall be the number used by Honeywell to help the supplier identify what memory shall be added to the workstation.

ATTENTION

If you have systems with 1GB (1x1GB) memory configuration, you must order MZ-PCEM11 memory expansion model, for increasing the system memory to 4GB.

If older memory expansion models are not available, then you can increase the system memory to 4GB using the latest 2GB expansion memory models (MZ-PCEM14).

In such cases, systems installed with 1GB (1x1GB) as standard memory configuration must be replaced with 4GB (2x2GB) memory module using the expansion memory kit MZ-PCEM14 for UDIMM configuration. For further details about MZ-PCEM14, refer to Standard memory configuration (4GB) using 2x2GB UDIMM.

The following table provides the various memory expansion models and its description.

Table 1-5 Memory details

Model number	Description
MZ-PCEM11	1GB (1x1GB), 1333MHz, DDR3, 1R UDIMMs ECC memory expansion
MZ-PCEM14	2GB (1x2GB), 1333MHz, DDR3, 1R UDIMMs ECC memory expansion

Standard memory configuration

Table 1-6 Standard memory

DIMM socket	Memory size
1	1GB
4	-
2	-
5	-
3	-
6	-
Total Memory	**1GB**

Optional memory configuration

Table 1-7 Optional memory

DIMM socket	Memory size		
1	1GB	1GB	1GB
4	-	-	1GB
2	1GB	1GB	1GB
5	-	-	-
3	-	1GB	1GB
6	-	-	-
Total Memory	**2GB**	**3GB**	**4GB**

Standard memory configuration (4GB) using 2x2GB UDIMM

Table 1-8 Standard memory

DIMM socket	Memory size
1	2GB

4	-
2	2GB
5	-
3	-
6	-
Total Memory	**4GB**

1.4 Workstation information

Honeywell documentation

The following table lists the Honeywell publications that may be useful when installing or operating your system.

Table 1-9 Honeywell publications

Publication	Contains information on…
ADP01: *Honeywell Peripheral Adapters*	Using the OEP/IKB adapter with workstation that does not have the ISA card.
FE05: *Fault Tolerant Ethernet Installation and Service Guide*	Installing and using FTE on a TPS or Experion PKS node.

Dell documentation

Table 1-10 Dell publications

Publication	Contains information on…	Is available with…
Readme files	Last-minute updates about technical changes to your workstation or advanced technical reference material for experienced users or technicians.	The drivers and utilities CD.
System Information Label	System board connectors. Location of system board components.	The inner cover of your workstation.
Dell System Information Guide	Warranty Safety	Workstation package For more information, refer to www.dell.com
Setup and Quick Reference Guide	Setting up the workstation. Caring for the workstation. Troubleshooting Running the Dell Diagnostics. Removing the workstation cover. Locating other documentation.	Workstation package For more information, refer to www.dell.com
Dell Precision™ Workstation T3500 User's Guide	Removing and replacing parts. Technical specifications. Configuring the system. Troubleshooting.	Product Documentation CD. For more information, refer to www.dell.com
The *Dell Precision™ T3500 Service Manual*.	Configuring the workstation. Removing and replacing parts.	Product Documentation CD. For more information, refer to www.dell.com

1.5 Specifications

Regulatory and safety compliance

WARNING

Honeywell does not claim Safety Compliance or Electromagnetic Compatibility (EMC) Compliance for system equipment configurations that are not described in this guide as standard system configurations. Any equipment configuration other than that described in this publication de-certifies the Safety and EMC compliance of this product.

Environmental specifications for tower units

The following table lists allowable operating environmental limitations for towers units.

Table 1-11 Temperature

Operating	+10° to +35° C ((50° to 95° F)
Storage	-40° to +65°C (-40° to 149° F)
Relative humidity (maximum):	20% to 80% (non-condensing)

Operating power requirements

Description	DC Power	AC Voltage	AC RMS Current	AC Power
Electronic Assembly	N/A	120 (90-132) Vrms 240 (180-260) Vrms	0.69 typ/0.93 max 0.43 typ/0.55 max	79/110 Watts max

Weight and dimensions

Description	Height	Width	Depth	Weight
Assembly	44.8 cm	17.2 cm	46.8 cm	38 lbs

Hard disk specifications

The T3500 Honeywell workstation has two internal bays with one internal 320 GB hard drive in the MZ-PCWS03 configuration. There is no option to add a second hard drive.

Operating power requirements

Description	DC 5 volt Power(typ)	DC 12 volt Power (typ)	DC Power (Other)	AC Power
320 GB	5 Volts +/- 5%	12 Volts +10%	22 Watts Max 10.0 Watts idle	N\A

Maximum weight and dimensions

Description	Height	Width	Depth	Weight
320 GB	19.99 mm	101.85 mm	146.99 mm	146.99 mm

Removable media

The T3500 Honeywell workstation has two 5.25-inches and one 3.5-inch removable media drive bays. The system is configured with one removable media drive. This drive is a SATA CD-RW/DVD±RW combo drive. The SATA CD-RW/DVD±RW drive is connected to a SATA port connector on the motherboard.

Description	DC 5 volts Power	DC 12 volts Power	DC Power (other)	AC RMS Current	AC Power
CDRW/DVDRW	6.0 Watts	21.6 Watts	N/A	N/A	N/A

Maximum weight and dimensions

Description	Height	Width	Depth	Weight
DVD+/-RW	40.64 mm	146.05 mm	14.22 mm	1.20 kg

Keyboard

A QWERTY keyboard must be provided with the T3500 Honeywell workstation. The workstation can also support different kinds of keyboards such as non-CE QWERTY, CE QWERTY, and QWERTY keyboard.

Mouse

The PS/2 or USB mouse is the standard cursor control device and is included with the T3500 Honeywell workstation.

Monitor

The T3500 Honeywell workstation supports industrial standard video format typically 1280X1024, 3200 X1200, and 1920X1200 at a refresh rate of 60 Hz for FPD, and can be configured only with a single or dual screen option.

ATTENTION

Touchscreen option is not available in the T3500 Honeywell workstation.

Printer

The T3500 Honeywell workstation can be configured with either a laser or a dot matrix printer through USB, Parallel or Ethernet.

System specifications

Table 1-12 System specifications

Microprocessor	
Microprocessor	Single Quad-Core Intel Xeon Processor W3530, 2.80GHz with 4.8GTs QPI or higher
Level 3 Cache(L3)	8MB Shared cached or higher
Chipset	Intel® X58
Expansion Slots	
Bus Type	o 2 PCIe x8 wired as x4 (half length). o 2 PCIe x16 slot Gen2 graphics slots up to 225W. o 2 PCI 32bit /33MHz 5V slot (half length).

Memory	
DIMM slots	Six
DIMM capacities	1 GB, 2 GB or 4 GB (Both ECC and Non – ECC)
Standard SDRAM	1 GB (1x1GB), 1R 1333MHz, DDR3 UDIMM ECC or 4 GB (2x2GB), 1R 1333MHz, DDR3 UDIMM ECC
SDRAM Expandability	Up to 24 GB DDR3 ECC ,Unbuffered
Optical Disk Drive	
DVD	16X DVD±RW with Cyberlink Power DVD, Roxio Digital Creator Dell Edition
Video	
Video Type	NVIDIA Quadro NVS295 Dual Video – PCI Express™ Graphics Video BIOS version 62.98.75.00.07 or later
Video Memory	256MB Minimum
Maximum Display Resolution (4:3) supported in Standard Mode @ 60 Hz	2048x1536
Maximum Display Resolution Digital @ 60Hz	2560x3200
Maximum DVI-D (single link) Display Resolution (through Display Port to DVI cable)	1920x1200
Network interface	
Network	Integrated Broadcom 5761 Gigabit Ethernet controller
Power supply unit	
Wattage	525 watts 85% Power Factor Correcting (PFC) power supply.

Voltage	115/230 VAC, 50/60 Hz, 6.0/3.0 A
Dissipation	1194 BTU/hr
Backup battery	3-V CR2032 lithium coin cell
Environmental Temperature	
Operating	+10° to +35° C ((50° to 95° F)
Storage	-40° to +65°C (-40° to 149° F)
Relative humidity (maximum)	20% to 80% (non-condensing)
Maximum vibration (using a random-vibration spectrum that simulates user environment):	
Operating	5 to 350 Hz at 0.0002 G^2/Hz
Storage	5 to 500 Hz at 0.001 to 0.01 G^2/Hz
Maximum shock (measured with hard drive in head-parked position and a 2-ms halfsine pulse):	
Operating	40 G +/- 5% with pulse duration of 2 msec +/- 10% (equivalent to 51 cm/sec [20 in/sec])
Storage	105 G +/- 5% with pulse duration of 2 msec +/- 10% (equivalent to 127 cm/sec [50 in/sec])
Altitude	
Operating	-15.2 to 3048 m (-50 to 10,000 ft)
Storage	-15.2 to 10,668 m (-50 to 35,000 ft)
Physical	
Form Factor/Configuration	Mini-Tower
Width	17.2 cm (6.8 inches)
Height	44.8 cm (17.6 inches)
Depth	46.8 cm (18.4 inches)
Weight	17.3 kg (38.0 lb)

Drive Bays	
Internal	Two 3.5 drive bays
External	One 3.5” Flex bay for floppy drive and (2) 5.25”
External Peripherals	
Keyboard	USB Windows compliant (equivalent or better)
Mouse	USB Dell optical 2-button w/scroll (equivalent or better)
Drives	
Diskette Drives	none
Hard Drive	One 320 GB SATA 7.2K RPM, with 16MB DataBurst Cache hard drive (minimum) Or One 500GB advanced format drive SATA 7.2K RPM, with 16MB DataBurst Cache hard drive (minimum)
Audio	
Audio Type	Integrated High Definition audio
Port	
Serial	One 9 pin connector
Parallel	One DB-25 pin connector (bi-directional)
PS/2 style keyboard	One 6 pin mini-DIN
PS/2 compatible mouse	One 6 pin mini-DIN
Stereo in/out	Stereo line-in and headphone line-out on back panel
Microphone	Microphone and headphone connector on front panel
USB	11 USB 2.0 ports (2 on front, 6 on back, 3 Internal)

TIP

Refer to the workstation user's guide for additional technical specifications and the vendor documentation for specifications on the peripheral devices.

2. Installation

2.1 Introduction

Overview

This section contains steps for installing and cabling the T3500 Honeywell workstation.

Installation tasks

The specific tasks you need to perform vary depending upon the type of furniture on which you are installing the workstation. The following table lists the major installation tasks.

Table 2-1 Major installation tasks

✓	Task
	Understanding the Power and grounding requirements.
	Installing the workstation and connecting the cables.
	Installing optional components.

Before you begin

Perform the following tasks.

- Ensure that the cabinet is properly grounded.
- Unpack the workstation from the box and verify the parts.
- Place the workstation on a secure surface near the cabinet to mount.
- Ensure that you have the necessary cables ready.

2.2 Power and grounding requirements

Grounding for workstation based nodes

The ground connection is made through the third wire in the AC power cord.

AC Power warning

WARNING

The power supply circuit is connected to the AC power. The power control switch on the front panel only enables power supply outputs.

ATTENTION

Honeywell recommends you connect the power cord to a clean power source with backup such as an Uninterruptible Power Source (UPS).

Selecting the correct power setting

The workstation automatically senses the power supply and therefore there is no positioning switch to be set.

2.3 Honeywell workstation rear view

The following figure shows the rear view of the workstation and identifies the connectors for all devices.

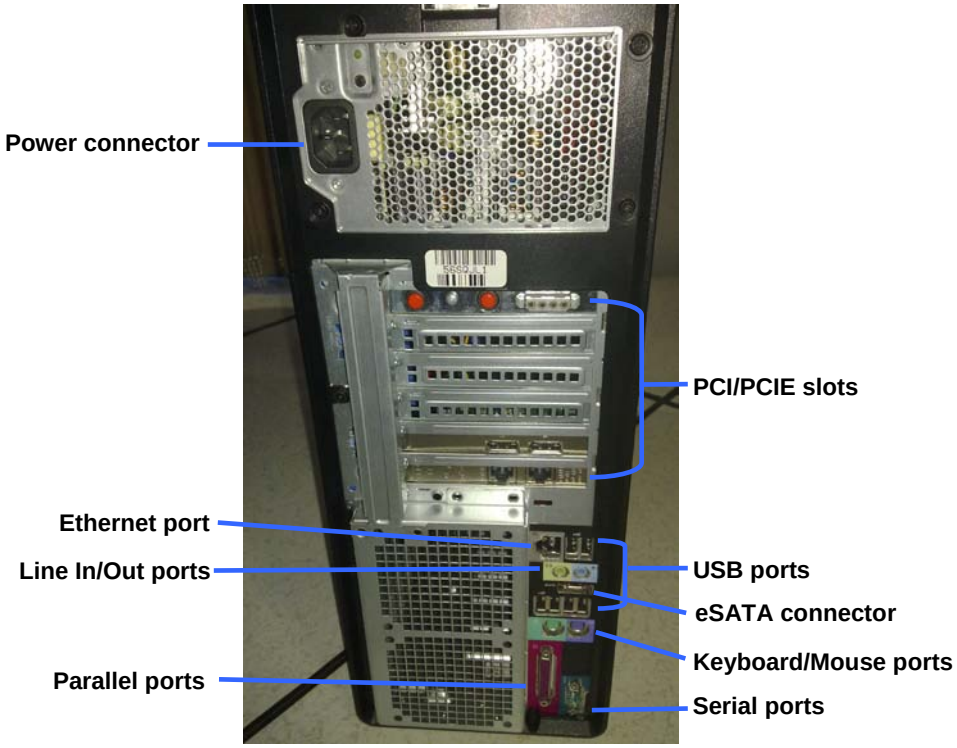


Figure 2-1 T3500 Honeywell workstation rear view

2.4 Installing the workstation and connecting the cables

Perform the following steps to install the workstation as a tower unit and to connect the cable to the back panel of the workstation. Refer to Figure 2-1.

Step	Action
1	Clear the place where your want to install the workstation.
2	Place the workstation on the desk (desktop) or on the floor (desk side) leaving enough space behind it to connect the cables.
3	Connect a parallel device, such as a printer, to the parallel port. If you have a USB printer, plug it into the USB port. **ATTENTION** The integrated parallel port is automatically disabled if the workstation detects an installed card containing a parallel port configured to the same address
4	Connect a serial device, such as a handheld device, to the serial port. If necessary, the address for this port can be modified.
5	o If you have a standard USB keyboard, plug it into the USB port. Or o If you have a PS/2 keyboard, plug it into the PS/2 purple keyboard port.
6	o If you have a standard USB mouse, plug it into the USB port. Or o If you have a PS/2 mouse, plug it into the PS/2 green mouse port.
7	Use the back USB ports for devices that typically remain connected, such as a printer, mouse, and keyboard connections.
8	Use the green lineout port to attach headphones and most speakers with integrated amplifiers. On workstations with a sound card, use the connector on the card.
9	Use the blue line-in port to attach a record/playback device such as a cassette player, CD player, or VCR. On workstations with a sound card, use the connector on the card.

Step	Action
10	To attach your workstation to a network or broadband device, connect one end of a network cable to either a network jack or your network or broadband device. Connect the other end of the network cable to the network adapter port on your workstation. A click indicates that the network cable has been securely attached. **ATTENTION** Do not plug a telephone cable into the network port. On workstations with an additional network connector card, use the connectors on the card and on the back of the workstation when setting up multiple network connections (such as a separate intranet and extranet). It is recommended that you use Category 5 wiring and connectors for your network. If you must use Category 3 wiring, force the network speed to 10 Mbps to ensure reliable operation.
11	Connect the AC power cord.

Connect remaining cables and power

Perform the following steps to connect the remaining cables to the back panel of the workstation. Refer to Figure 2-1.

Step	Action
1	If you have an IKB that uses the OEP/IKB adapter: o Connect the PS/2 keyboard cable from the OEP/IKB adapter to the keyboard PS/2 port.
2	o If you are not using Fault Tolerant Ethernet (FTE), connect the Ethernet cable to the RJ-45 connector on the Network Interface Card. o If you are using FTE, you must connect the FTE cables according to the instructions in the *FTE (FE05) Installation and Service Guide.*
3	Connect the USB devices or Hubs to the USB ports, if any, including the USB IKB if you are using one.

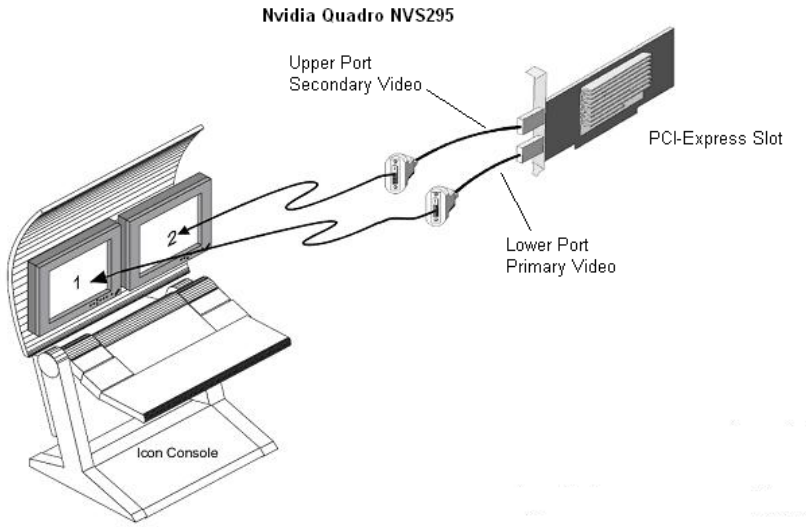
Connecting monitors cables

T3500 Honeywell workstation is configured with a 256MB Nvidia Quadro NVS295 dual video controller on a PCIE slot 2. The lower DP port is set as the primary video and the upper DP port as the secondary video when setting dual video configurations.

Perform the following procedure to connect the monitor cables to the back panel of the workstation.

ATTENTION

The figure in the following procedure is an example to illustrate the dual video connection. T3500 Honeywell workstation is not qualified to be used with Honeywell ICON Console.

Step	Action
1	The following are two types of monitor connection interface adapter are used with T3500 Honeywell workstation. o For analog monitor: Use DP to VGA Dongle cable (51150648-100). This DP to VGA dongle cable converts the display port signal to VGA signal. o For Digital Monitor: Use the DP to DVI-D Dongle cable. This dongle cable converts the display port signal to DVI-D signal. Connect the primary monitor in lower display port and secondary monitor in upper display port. 
2	Secure any loose cables, and verify that all cables have proper strain relief.
3	Refer to Configure monitors to configure the monitor

2.5 Installing optional components

Honeywell provides a number of optional components that can be installed in your workstation.

Component	Description
OEP/IKB adapter	Used for connecting an OEP or IKB that uses an ISA connection to the workstation's serial port. Refer to *Honeywell Peripheral Adapters Guide (ADP01).*

OEP/IKB Adapter Configurations

Perform the procedures in this section to connect the OEP/IKB adapter. The following block diagrams show the basic connections for the OEP/IKB adapter assembly used in different configurations.

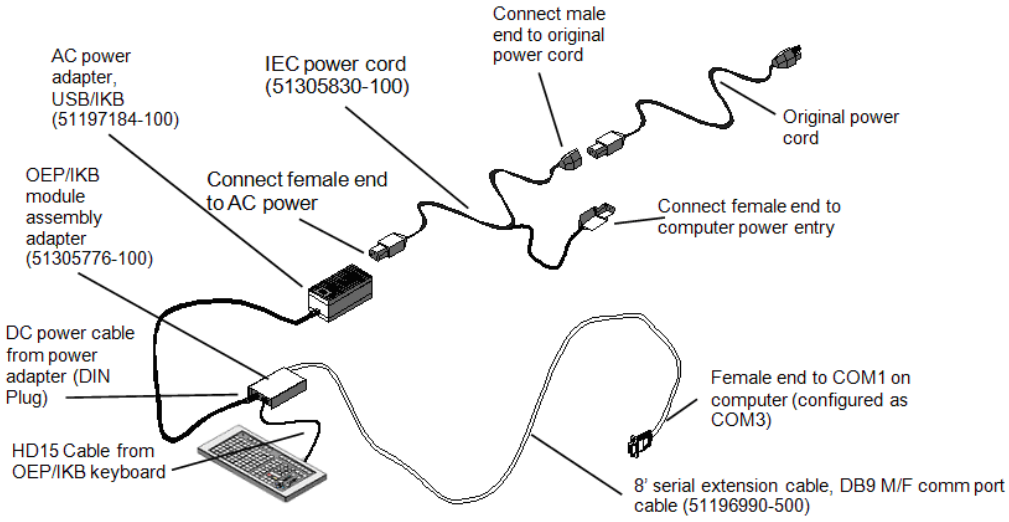


Figure 2-2 OEP/IKB adapter connections for OEP

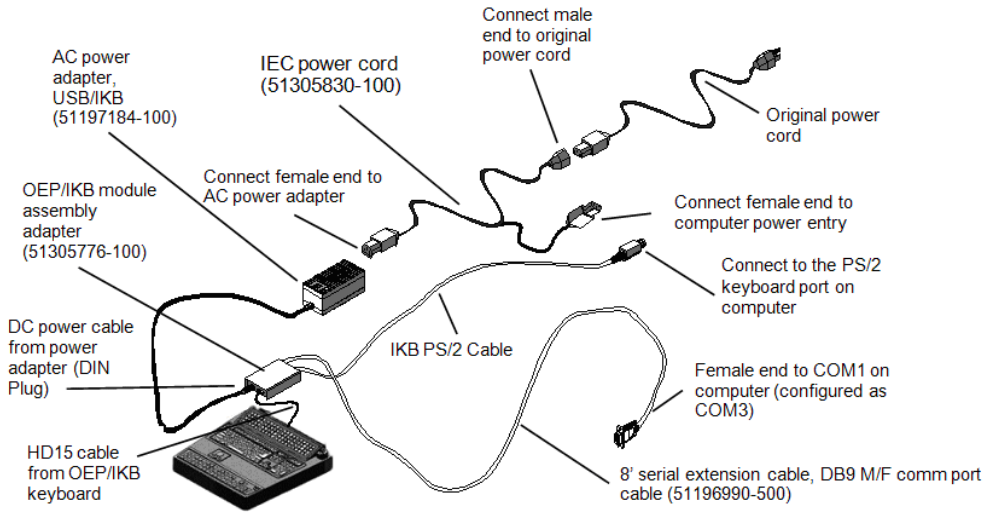


Figure 2-3 OEP/IKB adapter connections for IKB

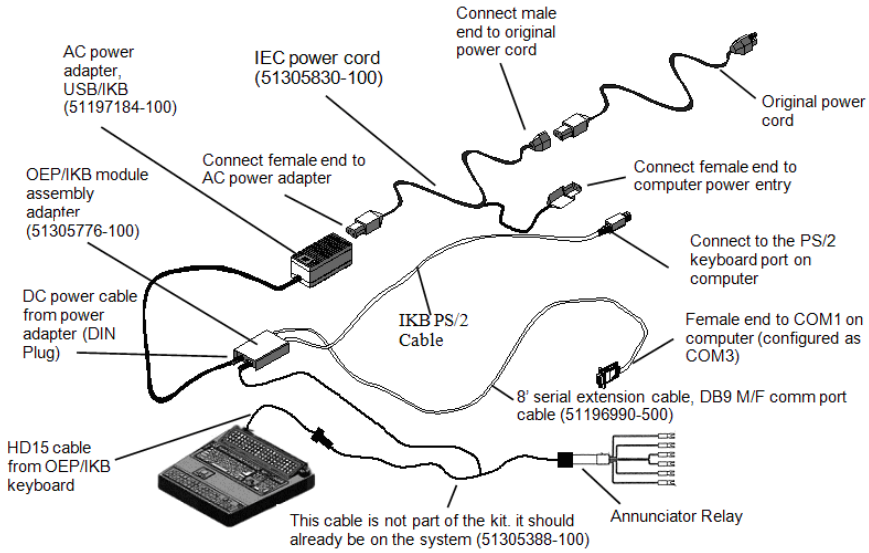
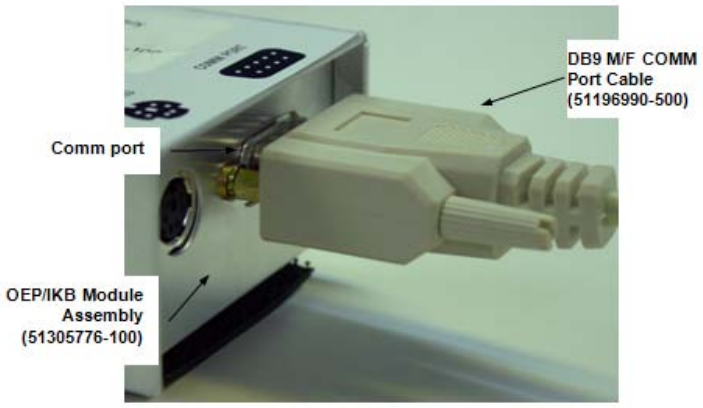


Figure 2-4 OEP/IKB adapter connections for IKB with annunciator relay

Install OEP/IKB adapter

Perform the following steps to install the OEP/IKB adapter.

Step	Action
1	Locate a safe location for the OEP/IKB adapter box and secure it using the supplied Velcro.
2	Locate a safe location to place the OEP/IKB power adapter box and secure it using the supplied Velcro.
3	If the IKB has a trackball, connect it to the mouse PS/2 port on the workstation.
4	Locate and connect the male end of the DB9 M/F COM Port Cable (51196990-500) to the COM PORT on the OEP/IKB Module Assembly/Adapter (51305776-100).

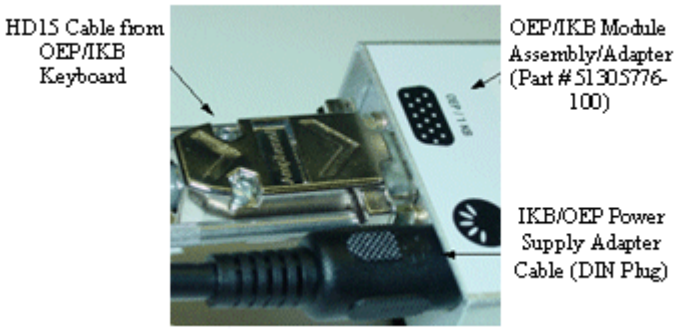


5	Secure the connection by tightening the thumbscrews located on the cable end.
6	Connect the female end of the DB9 M/F COM Port cable (51196990-500) to COM 1 port located on the workstation's back panel and tighten the thumbscrews.

Step	Action
7	Insert the round DIN plug of the supplied IKB PS/2 cable (51305381-500) into the PS/2 connector on the OEP/IKB Module Assembly (51305776-100).

8	Connect the free end of the IKB PS/2 cable (51305381-500) to the keyboard PS/2 port on the workstation.
9	Take the DC power cable from the IKB/OEP Power Supply Adapter (51197184-100) and insert the round DIN plug into the Power Connector receptacle on the IKB/OEP Module Assembly/Adapter (51305776-100).

Step	Action
10	Connect the existing OEP/IKB Keyboard HD15 Cable to the HD15 OEP/IKB receptacle located on the IKB/OEP Assembly/Adaptor (51305776-100). Secure cable to the assembly/adapter by tightening the thumbscrews located on the cable's end.

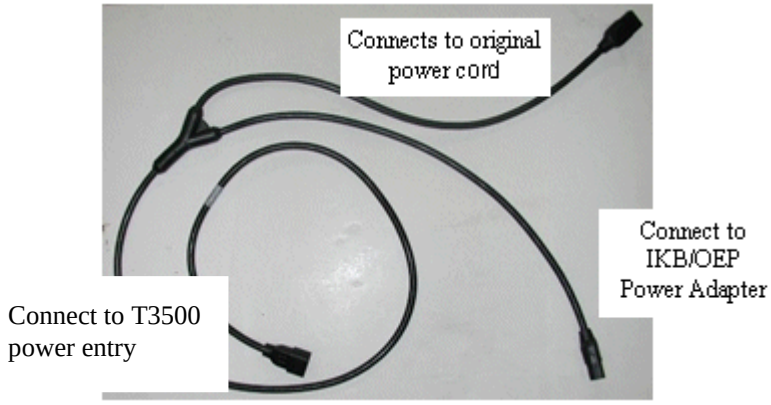


11 Perform the following to connect the IEC power cord (51305830-100):

a. Connect one female end to the OEP/IKB power adapter (51197184-100).

b. Connect the other female end to the T3500 power entry.

c. Connect the male end to the original workstation power cord.



3. Operation

3.1 Starting the workstation

This section describes the steps to be performed for turning on the workstation and setting the monitor resolution.

Turn on the workstation

Perform the following steps to turn on the workstation.

Step	Action
1	Press the power button on the front panel of the T3500 Honeywell workstation.
2	Wait for the power light to become solid green.

ATTENTION

If the power light does not become solid green, refer to the Troubleshooting section in the *Dell™ Precision™ T3500 Systems Hardware Owner's manual*.

Set monitor resolution

When the workstation is initialized, the monitor configuration is established based on the following user input.

- FPD type monitors: 60 Hz

After initialization, if you are installing a monitor different from what was originally defined, you need to adjust the monitor settings for optimal performance.

TIP

Refer to the specific monitor user's guide for other recommended settings.

Perform the following steps to set the monitor resolution.

Step	Action
1	Choose **Start > Settings > Control Panel.** The **Control Panel** window appears.
2	Double-click **Display**, and then click the **Settings** tab.
3	Under **Screen resolution**, drag the slider to the appropriate resolution.
4	Click **Apply**, and then click **OK**.

3.2 Configure monitors

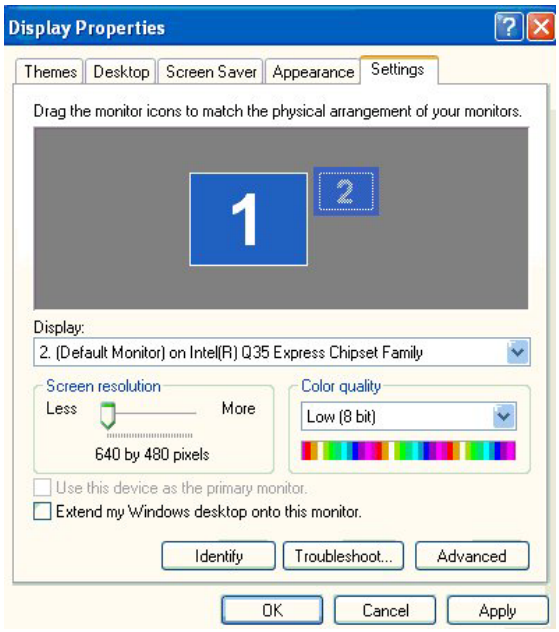
Perform the following steps to configure the dual video display connectors using the NVIDIA NVS 295 video card.

ATTENTION

If you are not using all available channels on the installed video cards, you must configure your monitors such that the monitors are connected to the lowest and highest channels.

Step	Action
1	Verify that the monitors are physically attached to at least the highest and lowest video channels.
2	Choose **Start > Settings > Control Panel.** The **Control Panel** window appears.

Step	Action
3	Double-click **Display**. The **Display Properties** dialog box appears.



4	Click the **Settings** tab.
5	Select a monitor if you want to enable (for example monitor number 2).
6	Clear **Extend my windows desktop onto this monitor** checkbox.
7	Click **Apply**, and then click **OK**.

3.3 Network connections

Ethernet network

T3500 Honeywell workstation must be connected to an Ethernet network. Ethernet 10/100/1000 Base T connection is standard on the T3500 Honeywell workstation. A Dual NIC option is available for FTE. The on board Ethernet connection must be disabled in the system BIOS prior to installation of the Dual Intel PRO 100/1000 controller. A single NIC, model number is also available for the workstation option under Experion configurations mentioned in the following table.

Table 3-1 Network controller

Model no	Description
NE-NICSS1	Single NIC card, PCIE, server
NE-NICS02	NIC card, PCIE dual port STP
NE-NICS03	NIC Card PCIE GB ET Chipset

4. Servicing

4.1 Before you begin

Ensure to perform the following:

- Shut down the workstation

SHOCK HAZARD

- To avoid electrical shock, ensure that you unplug the computer from the electrical outlet.
- Disconnect the power cords and cables from the back panel.

- Refer to the safety instructions in the *Dell System Information Guide*.
- Remove the workstation from the tower unit and place on a secure surface.
- After removing the cover, ensure that you do not disconnect the cables from the system board.

Recommended tools

- Small flat-blade screwdriver
- Small Phillips screwdriver
- Small plastic scribe
- Flash BIOS update program

4.2 Accessing the components in the workstation

This section contains the steps for removing the workstation from a tower unit.

Removing the side cover

To remove or install the components on the motherboard; you must first remove the side cover. Perform the following steps to remove the side cover.

Step	Action
1	Lay your computer on its side with the computer cover facing up.
2	Press the release latch, and pull the latch of the cover away from the computer.

Step	Action
3	With the cover release latch pulled away, pull the side cover away from the computer.

Step	Action
4	Slide the cover forward to remove it from the hinge slots, and then set the cover aside in a secure place.

4.3 Replacing the cards in expansion slots

Overview

This section contains the steps for adding or replacing optional components in the workstation.

Before you begin

CAUTION Be careful not to damage the EMI gasket fingers when removing/installing boards.

ESD HAZARD

Use a grounding strap and grounded work surfaces and equipment when handling any electrostatically sensitive components such as the video cards, NIC adapter cards, and SCSI controller cards. Ensure to store and transport parts only in electrostatically safe containers.

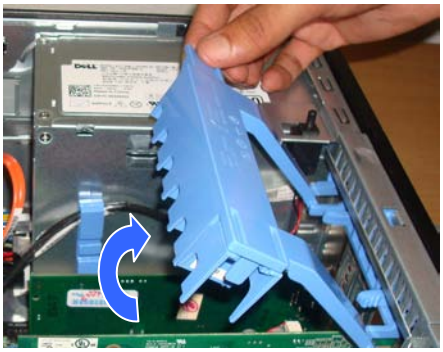
Replacing the video card

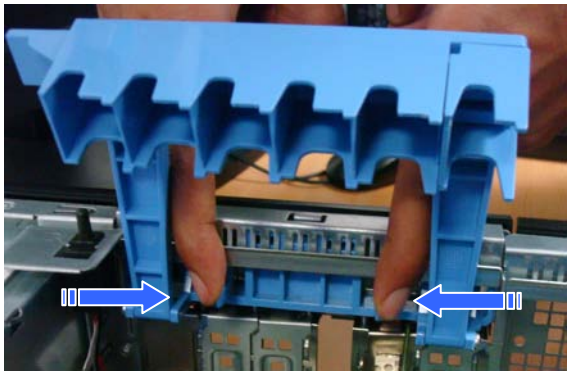
The video card is located in the PCIE slot 2 of the workstation.

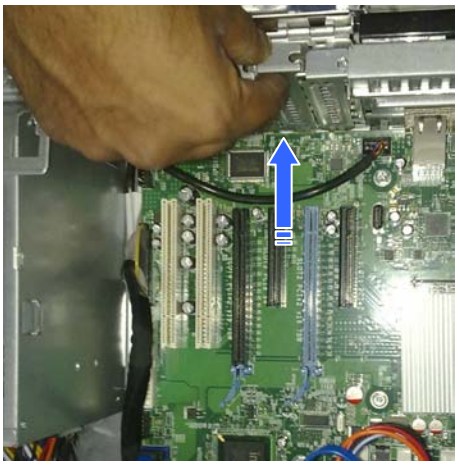
Figure 4-1 NVS295 video card

Perform the following steps to replace the video card.

Step	Action
1	Remove the cables from back panel of the video card.
2	Remove the side cover.
3	Press the blue release tabs on the card retention door and pull the door to open.
4	Lift the card retention arm to access the board as shown.
5	While wearing a grounded ESD wrist strap, lift the cardholder over to expose the mounting screws as shown.





Step	Action
6	Remove the metal shield from PCIE slot 2 as shown. 
7	Insert the new single or dual display controller NVS295 card in the PCIE slot 2. 

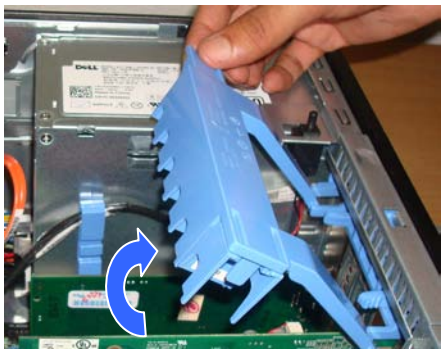
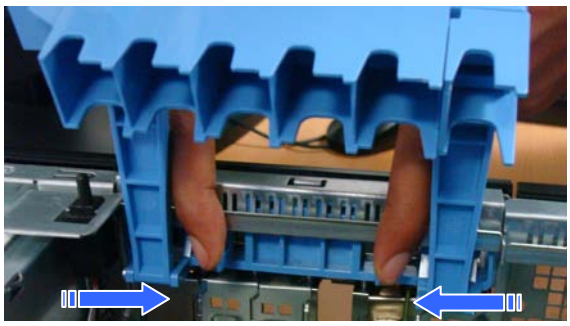
Step	Action
	ATTENTION Do not mix flat panel displays and CRTs in a multi-screen configuration on a single platform.
8	Replace the cardholder and card retention arm, making sure the tab locks into place.
9	Replace the side cover.
10	Connect cables to the back panel of the video card.

Replacing the dual NIC

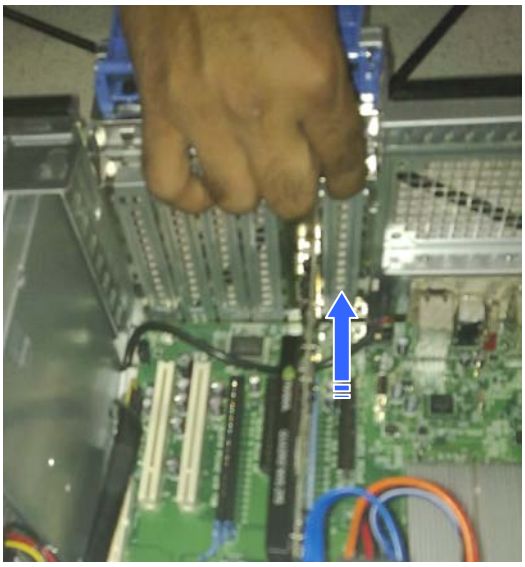
The Dual Intel Pro 1000 PT/ET Ethernet card is located in the PCI slot 1 in the workstation.

Figure 4-2 Intel Pro 1000 PT card

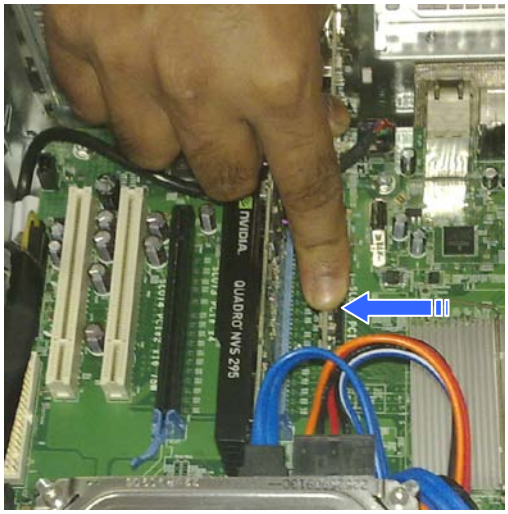
Perform the following steps to replace the dual NIC card. If you are adding the FTE dual NIC, you must have access to the *FTE Installation and Service Guide.*

Step	Action
1	Remove the cables from back panel of the video card.
2	Remove the side cover.
3	Press the blue release tabs on the card retention door and pull the door to open.
4	Lift the card retention arm to access the board as shown. 
5	While wearing a grounded ESD wrist strap, lift the cardholder over to expose the mounting screws as shown. 

Step	Action
6	Remove the metal shield from PCI slot 1as shown.



7	Insert the new single or dual NIC card in the PCIE slot 1.

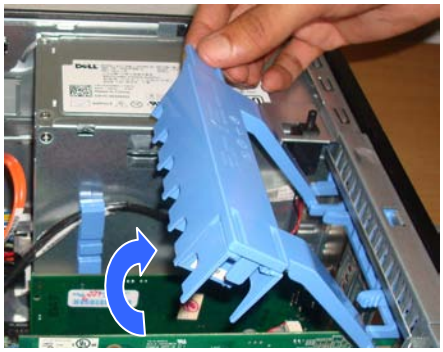


Step	Action
8	Replace the cardholder and card retention arm, making sure the tab locks into place.
9	Replace the side cover.
10	Connect cables to the back panel of the network interface card.

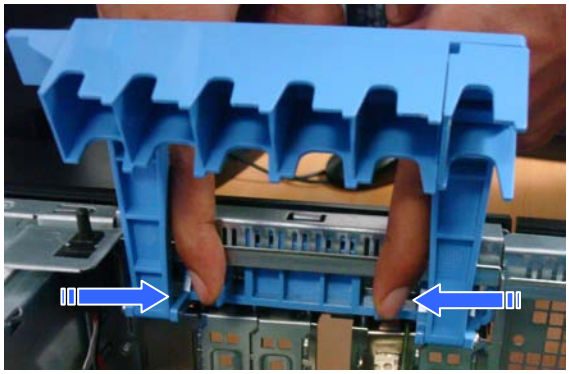
Replacing the power adapter card

The power adapter card is located in the PCI slot 6 of the workstation. Perform the following steps to replace the power adapter card.

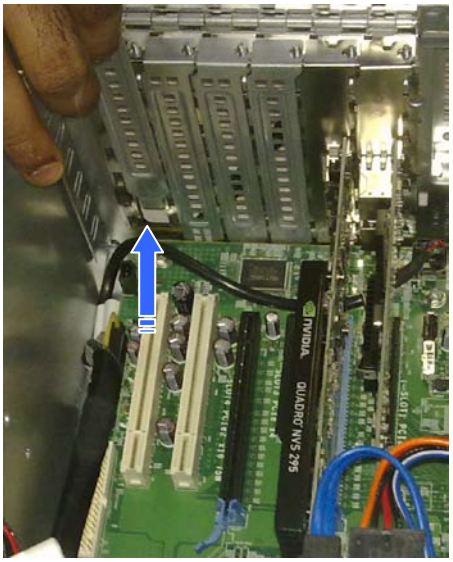
Step	Action
1	Remove the cables from back panel of the video card.
2	Remove the side cover.
3	Press the blue release tabs on the card retention door and pull the door to open.
4	Lift the card retention arm to access the board as shown.



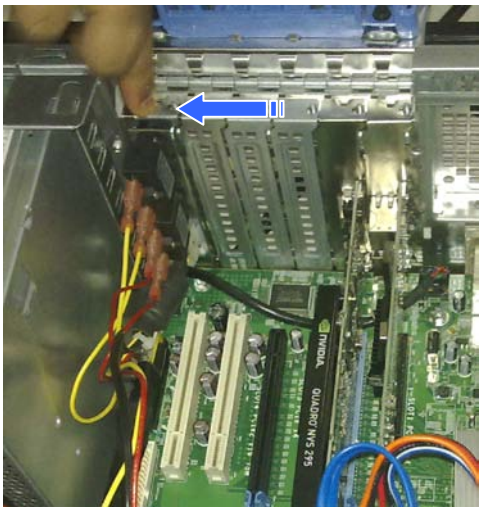
Step	Action
5	While wearing a grounded ESD wrist strap, lift the cardholder over to expose the mounting screws as shown.



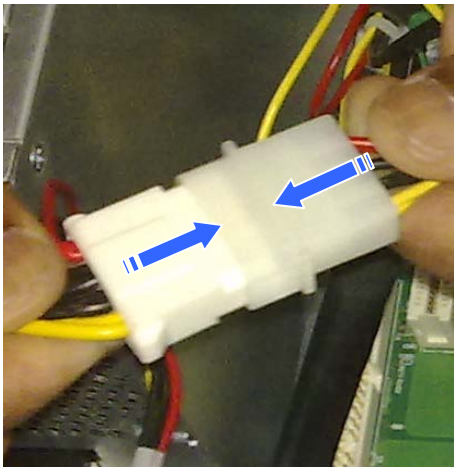
6	Remove the PCI slot 6 filler.



Step	Action
7	Insert the Power adapter harness in PCI Slot 6.



8	Connect the Power adapter to the power supply.



8	Replace the cardholder and card retention arm, making sure the tab locks into place.
9	Replace the side cover.

Step	Action
10	Connect cables to the back panel of the power adapter.

Adding additional memory

ESD HAZARD

Memory is electrostatically sensitive. Use a grounding strap and grounded work surfaces and equipment when handling these components. Ensure to store and transport parts only in electrostatically safe containers.

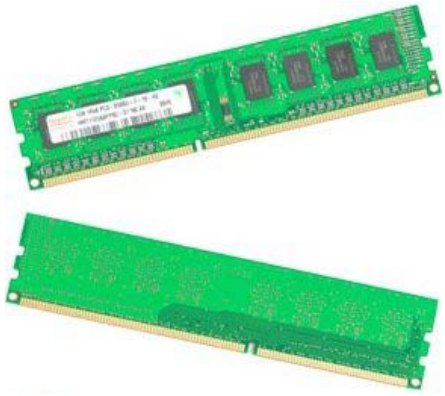
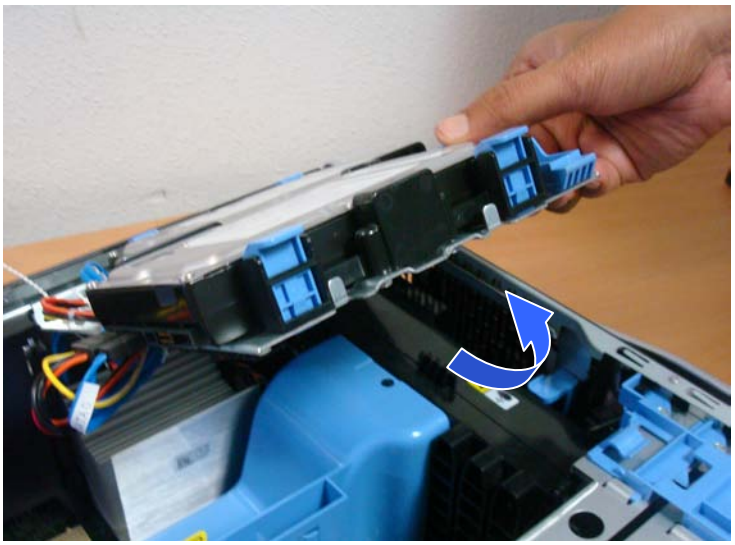


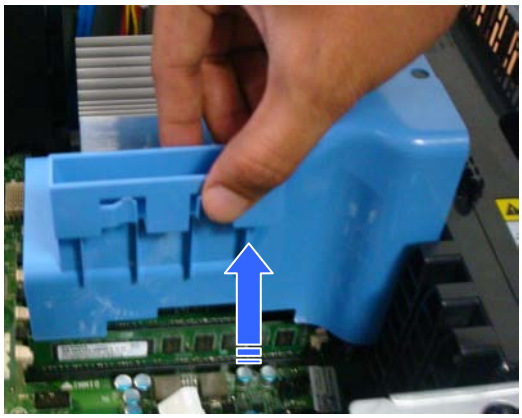
Figure 4-3 Memory cards

Perform the following steps to add additional memory to the workstation.

Step	Action
1	Remove the side cover. **ATTENTION** The following figure is an example to illustrate how to remove the hard disk drive bay lock. T3500 Honeywell workstation is not qualified to use dual hard disk drive.
2	Release the tab on the card retention arm and lift it up.

Step	Action
	
3	Lift the cardholder by its handle.
	
4	Remove the blue shroud as shown.

Step	Action

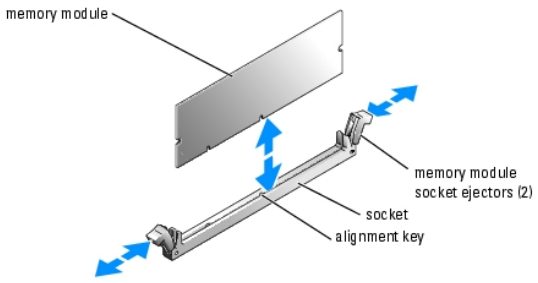


CAUTION

The DIMMs are hot to the touch for some time after the computer is turned down. Allow time for the DIMMs to cool before handling them. Handle the DIMMs by the edges and avoid touching DIMM components.

5 Refer to Memory configurations for DIMM socket configuration.

6 Wearing a grounded ESD wrist strap, press the ejectors on the memory module socket down and out to allow the memory module to be inserted into the socket.



Step	Action
7	Align the memory module's connector with the alignment key on the memory module socket, and insert the memory module in the socket. **ATTENTION** The memory module socket has an alignment key that allows you to install the memory module in the socket only in one way.
8	Replace the side cover.
9	Connect your computer and devices to electrical outlets, and then turn them on.

4.4 Verifying the BIOS settings

Purpose

Honeywell configures specific BIOS settings in the factory for each workstation configuration, and this setting should not be altered. You may verify the settings if required.

Enter the BIOS

Perform the following steps to access BIOS and view the settings.

ATTENTION

DO NOT attempt this procedure unless you are familiar with BIOS.

Step	Action
1	Turn on the workstation.
2	Press F2 to enter the BIOS Setup.
3	Check if you are using the latest version of BIOS.

BIOS settings

The following table lists the BIOS settings configured in the factory for the non-raid workstation.

Table 4-1 BIOS Settings for T3500 Honeywell workstation

BIOS Settings	
System	Dell Precision Workstation T3500 Minitower
BIOS Version	C52
Service Tag	XXXXXX
Express Service Code	XXXXXXXXXXX
Asset Tag	Honeywell
Manufacture date	MM/DD/YYYY
Owner date	MM/DD/YYYY
Processor Info	
Type	Intel ® Xeon ® CPU W3530 @2.80GHz
Processor Speed	2.800GHz
QPI speed	4.800GT/s
Processor L2 Cache	1MB
Processor L3 Cache	8MB
Processor ID	106A5
Microcode Version	11
Multiple Core Capable	Yes(Quad)
HT Capable	Yes
64-bit Technology	Yes (Intel EM64T)
Memory Information	
Installed Memory	1GB or 4GB
Memory Speed	1066MHz
Number of active channels	1
Memory Technology	DDR3
DIMM 1	1GB or 2GB
DIMM 2	Empty or 2GB
DIMM 3	Empty
DIMM 4	Empty
DIMM 5	Empty
DIMM 6	Empty

BIOS Settings	
PCI information	
Slot 1	Empty
Slot 2	VGA Compatible
Slot 3	Empty
Slot 4	Empty
Slot 5	Empty
Slot 6	Empty
Date	MM/DD/YY HH:MM:SS A/P
Time	XX/XX/XX XX: HH:SS AM/PM
Boot Sequence	
Onboard or USB CD-ROM Drive	
Onboard or USB floppy drive	
Onboard SATA HDD	
Drives	
Diskette Drive	USB
SATA Operation	Raid autodetect / AHCI
Smart Reporting	Enable Smart reporting
Drives	
SATA-0	On
SATA-1	On
System Configuration	
Integrated NIC	Disable
USB Controller	Enable
Parallel port	PS/2
Parallel Port address	378h
Serial Port 1	Auto
Miscellaneous devices	Rear Quad USB
	Rear Dual USB
	Audio
Video	
Primary Video	Option 2
Performance	
Multi core support	Enable multi core support

BIOS Settings	
Hardware prefetcher	Enable Hardware prefetcher
Virtualization	Off
Limit CPUID Value	Off
HDD Acoustic Mode	Bypass
Security	
Admin password	Not set
Enter the Old Password	Not set
Enter the New Password	Not set
Confirm New Password	Not set
System Password	Not set
Enter the Old Password	Not set
Enter the New Password	Not set
Confirm New Password	Not set
Password Changes	Enable Password changes
TPM Security	Deactivate
CPU XD support	Enable CPU XD support
Comptrace®	Deactivate
SATA – 0 Password	
Enter the Old Password	Not set
Enter the New Password	Not set
Confirm New Password	Not set
Power Management	
AC Recovery	Power Off
Auto On Time	Off
XX: XX XX	Disable
HH: MM A/P	
Low Power Mode	Off
Remote Wakeup	Off
Maintenance	
Service Tag	XXXXX
Asset Tag	Honeywell
ASF Mode	Disable
Post Behavior	
Fast Boot	Enable fast boot

BIOS Settings	
Numlock Key	Enable numloack LED
Post Hotkeys	Enable F12 = Boot menu
Keyboard Errors	Enable Keyboard error detection
System Logs	
BIOS events	
Clear log	Make all entries

Exit the BIOS

Perform the following steps to exit from the BIOS settings.

Step	Action
1	Press the **ESC** key on the keyboard. A message appears prompting you to save the settings.
2	Click **Save Changes and Exit**.
3	Press the **ENTER** key to restart the workstation.

4.5 Spare parts

This following table lists the spare parts for the T3500 Honeywell workstation.

Table 4-2 Spare parts

Item	Description	Part No.
Mouse	USB Optical Mouse	51154551-901
Keyboard	USB Keyboard	51154551-902
Expansion RAM	1GB, 1333MHz, DDR3, unbuffered ECC, SDRAM.	51154294-904
	2GB, 1333MHz, DDR3, unbuffered ECC, SDRAM	51154292-913
DVD±RW	ASSY,DVD+/- RW,16,TSST,SATA,BLK	51154551-903
Processor	2.8GHz Intel Xeon Processor W3530, 4.8GTs QPI and 8MB Shared L3 cache	51154551-904
Video	NVIDIA Quadro NVS295 Dual Video Card - PEG Video BIOS version 62.98.75.00.07 or higher	51154290-907
Manuals	Electronic Documentation	51154551-905

5. Notices

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5.1 Documentation feedback

You can find the most up-to-date documents on the Honeywell Process Solutions support website at:

http://www.honeywellprocess.com/support

If you have comments about Honeywell Process Solutions documentation, send your feedback to:

hpsdocs@honeywell.com

Use this email address to provide feedback, or to report errors and omissions in the documentation. For immediate help with a technical problem, contact your local Honeywell Process Solutions Customer Contact Center (CCC) or Honeywell Technical Assistance Center (TAC) listed in the “Support and other contacts” section of this document.

5.2 How to report a security vulnerability

For the purpose of submission, a security vulnerability is defined as a software defect or weakness that can be exploited to reduce the operational or security capabilities of the software.

Honeywell investigates all reports of security vulnerabilities affecting Honeywell products and services.

To report a potential security vulnerability against any Honeywell product, please follow the instructions at:

https://honeywell.com/pages/vulnerabilityreporting.aspx

Submit the requested information to Honeywell using one of the following methods:

- Send an email to security@honeywell.com.

or

- Contact your local Honeywell Process Solutions Customer Contact Center (CCC) or Honeywell Technical Assistance Center (TAC) listed in the "Support and other contacts" section of this document.

5.3 Support and other contacts

For support, contact your local Honeywell Process Solutions Customer Contact Center (CCC).

North America

Country	Phone	Facsimile	Email
Canada and United States	800-822-7673	973-455-5000	asksc@honeywell.com

Northern Europe

Country	Local Time Business	Phone	Facsimile	Email

	Hours			
Denmark	07:00 – 18:00	80–252165	+45 6980 2349	hpscustomersupport@honeywell.com
Finland	08:00 – 19:00	0800–9–15938	+358 (0)9 2319 4396	hpscustomersupport@honeywell.com
Ireland	06:00 – 17:00	1800939488	+353 (0)1 686 4905	hpscustomersupport@honeywell.com
Netherlands	07:00 – 18:00	0800 020 3498	+31 (0)20 524 1609	hpscustomersupport@honeywell.com
Norway	07:00 – 18:00	800–11478	47–852–287–16	hpscustomersupport@honeywell.com
Sweden	07:00 – 18:00	0200883167	+46 (0)8 509 097 84	hpscustomersupport@honeywell.com
United Kingdom	06:00 – 17:00	08002797226	+44 (0)20 3031 1064	hpscustomersupport@honeywell.com

Southern Europe

Country	Local Time Business Hours	Phone	Facsimile	Email
Belgium	07:00 – 18:00	080048580	+32 (0)2 791 96 02	hpscustomersupport@honeywell.com
France	07:00 – 18:00	0805100041	+33 (0)1 72 74 33 44	hpscustomersupport@honeywell.com
Luxembourg	07:00 – 18:00	8002–8524	+352 24611292	hpscustomersupport@honeywell.com
Spain	07:00 – 18:00	800099804	+34 91 791 56 25	hpscustomersupport@honeywell.com
Portugal	06:00 – 17:00	800–8–55994	+34 91 791 56 25	hpscustomersupport@honeywell.com

Eastern Europe

Country	Local Time Business Hours	Phone	Facsimile	Email
Bulgaria	08:00 – 19:00	700 20771	+359 (0)2 489 7384	hpscustomersupport@honeywell.com
Croatia	07:00 – 18:00	0800 80 6392	+420 227 204 957	hpscustomersupport@honeywell.com
Czech Republic	07:00 – 18:00	800 142 784	+420 227 204 957	hpscustomersupport@honeywell.com
Hungary	07:00 – 18:00	06 800 20 699	+36 (06) 1 577 7371	hpscustomersupport@honeywell.com
Poland	07:00 – 18:00	00 800 121 50 46	+48 22 485 35 10	hpscustomersupport@honeywell.com
Romania	08:00 – 19:00	0 800 800 178	+40 (0)31 710 7590	hpscustomersupport@honeywell.com
Russia Federation	09:00 – 20:00	8.10.80 02-412 50 11	+7 495 796 98 94	hpscustomersupport@honeywell.com
Slovakia	07:00 – 18:00	0800 002 340	+421 (0)2 3301 0376	hpscustomersupport@honeywell.com

Central Europe

Country	Local Time Business Hours	Phone	Facsimile	Email
Austria	07:00 – 18:00	0800 006438	+43 (0)1 253 6722 4904	hpscustomersupport@honeywell.com
Germany	07:00 – 18:00	0800 7239098	+49 (0)30 6908 8463	hpscustomersupport@honeywell.com

Greece	08:00 – 19:00	00800 12 9493	+30 21 1 268 6973	hpscustomersupport@honeywell.com
Israel	08:00 – 19:00	1 809 407 309	+972 (0)2 591 6148	hpscustomersupport@honeywell.com
Italy	07:00 – 18:00	8000 35205	+39 06 96681356	hpscustomersupport@honeywell.com
Switzerland	07:00 – 18:00	00 080 035	+41 (0)31 560 41 60	hpscustomersupport@honeywell.com

Middle East and South Africa

Country	Local Time Business Hours	Phone	Email
Bahrain	08:00 – 19:00	8008 1343	hpscustomersupport@honeywell.com
Oman	08:00 – 19:00	8007 7595	hpscustomersupport@honeywell.com
Qatar	08:00 – 19:00	800 5460	hpscustomersupport@honeywell.com
Saudi Arabia	08:00 – 19:00	800 844 5309	hpscustomersupport@honeywell.com
South Africa	07:00 – 18:00	0800 983 634	hpscustomersupport@honeywell.com
Turkey	08:00 – 19:00	00800 448823587	hpscustomersupport@honeywell.com
United Arab Emirates	09:00 – 20:00	8000 444 0300	hpscustomersupport@honeywell.com

Other regions

Region	Phone	Facsimile	Email
Pacific	1300-364-822 (toll free within Australia) +61-8-9362-9559 (outside Australia)	+61-8-9362-9564	GTAC@honeywell.com

India	+91-20-6603-2718 / 19 1800-233-5051	+91-20-6603-9800	Global-TAC-India@honeywell.com
Korea	+82-80-782-2255 (toll free within Korea)	+82-2-792-9015	Global-TAC-Korea@honeywell.com
People's Republic of China	+86-21-2219-6888 800-820-0237 400-820-0386		Global-TAC-China@honeywell.com
Singapore	+65-6823-2215	+65-6445-3033	GTAC-SEA@honeywell.com
Japan		+81-3-6730-7228	Global-TACJapanJA25@honeywell.com

World Wide Web

Honeywell Process Solutions support website:

http://www.honeywellprocess.com/support

Elsewhere

Contact your nearest Honeywell office.

5.4 Training classes

Honeywell holds technical training classes on Experion PKS. These classes are taught by experts in the field of process control systems. For more information about these classes, contact your Honeywell representative, or see http://www.automationcollege.com.

Honeywell

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