Honeywell

Honeywell Process Solutions

T3400 Honeywell Workstation

Planning, Installation, and Service Guide

EP-DPCX22
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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 T3400 Honeywell workstation. The instructions and service information contained in this guide addresses the server, and assumes that associated network communication equipment is pre-installed by the Honeywell factory or has manuals dedicated to its installation and service. This server 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 Number	Part No
T3400 Honeywell Workstation Planning, Installation, and Service Guide- pisg-3400	EP-DPCX22	Release Independent	51154185-902

Revision Notes

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

Revision	Revision Date	Revision Notes
A		Initial Issue
B	01/21/2010	-
C	8/26/2010	ECO P300098
D	06/01/2011	ECO P310057A
E	05/01/2012	Inserted Windows 7 64 bit operating system support.

References

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

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 T3400 Honeywell workstation

Workstations 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 T3400 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 provides computer-based functionality for the Experion system qualified only on the Microsoft Windows XP 32bit, Microsoft Windows 7 Professional 32-bit, and Microsoft Windows 7 Professional 64-bit operating systems. The workstation peripheral electronics assemblies are based on Peripheral Component Interconnect (PCI) bus, PCI Express, and PCI-X or USB 1.1/2.0 protocols. All mass storage and removable media devices except floppy drive are connected through the eSATA, SATA II 3.0, or USB, depending on the Dell T3400 configuration. You can install up to six SATA II 3.0 ports for hard disk drives and DVD drives. The dual channel unbuffered DDR2 SDRM memory for this workstation is 1.0GB 667Hz ECC, which is optionally expandable to 2GB, 3GB or 4GB ECC. There are no cache memory options. The standard mass storage for this workstation is an 80GB or larger SATA II 3.0. There is no option to add a second SATA hard drive. The model numbers for this workstation are structured to include the Dell USB keyboard and mouse with the workstation.

Software requirements

The workstation runs on Microsoft Windows XP 32bit operating systems for Experion R310 release, and Microsoft Windows 7 Professional 32-bit, and Microsoft Windows 7 Professional 64-bit operating systems for Experion R4xx. Refer to the latest SCN for software applications that are qualified for use on the T3400 Honeywell workstation.

BIOS configuration

The T3400 Honeywell workstation must have the latest version of the BIOS.

1.2 Description

T3400 Honeywell workstation model number

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

Model number	Description	Part Number
MZ-PCWS02	T3400 Honeywell Workstation	51154185-100

Figure 1-1 Honeywell workstation tower unit

Furniture options

You can place the T3400 Honeywell workstation vertically, and is supported only for the tower configuration.

Honeywell logo

The T3400 Honeywell server is supplied with one Honeywell logo with the part number 51153722-100.

System board

The following picture shows the system board components.

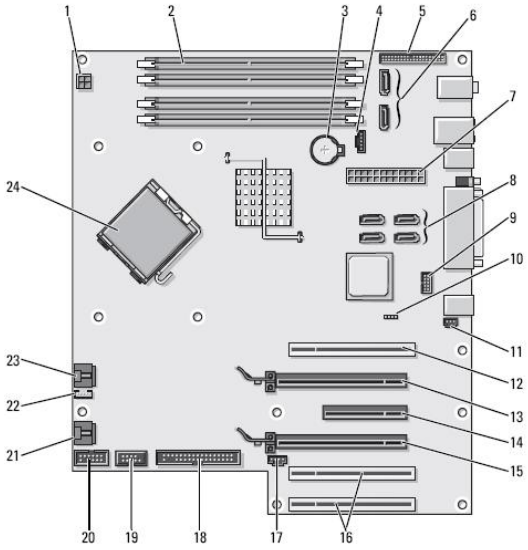


Figure 1-2 T3400 Workstation system board

No	Description
1	Power Connector (12VPOWER)
2	Memory module connectors (DIMM_1-4)
3	Battery socket (BATTERY)
4	Memory fan connector (FAN_MEM1)
5	Front panel connector (FRONTPANEL)
6	SATA connectors (SATA0, SATA1)
7	Main power connector (POWER)
8	SATA connectors (SATA2-5)
9	Flexbay connector (USB1)
10	Password reset jumper (RTCRST_PSWD)

11	Chassis intrusion header (INTRUDER)
12	PCI Card Slot (SLOT1)
13	PCI Express x16 card Slot (SLOT2)
14	PCI Express x8 card Slot wired as x4 (SLOT3)
15	PCI Express x16 card Slot (SLOT4)
16	PCI Card Slot (SLOT5, SLOT6)
17	SAS Card Activity LED (AUX_LED)
18	Floppy drive (FLOPPY)
19	uDOC Connector (UDOC1)
20	Serial Connector(SERIAL2)
21	Card cage fan (FAN_CARD_CAGE)
22	Internal speaker connector (INT_SPKR)
23	Processor Fan Connector (FAN_CPU)
24	Processor Connector (CPU)

Features

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

- Intel Core2 Duo E8400 3.0GHz processor motherboard with 1333 MHz FSB
- 6 MB or greater L2 cache
- One serial port
- One DB25 parallel port
- Eleven USB 2.0 ports
  - Two in front
  - Three inside the workstation
  - Six at the back
- Two PS/2 ports

- Six Expansion slots
  - Two PCIEx16 graphics slot
  - One PCIEx8 slot wired as x4
  - Three PCI 32bit, 33MHz slot with support for 5 volts cards
- Internal chassis speaker
- LAN - Integrated Broadcom 5754 Gigabit Ethernet controller
- 375 watts power factor correcting power supply (auto-ranging)
- 16X DVD±RW with Cyberlink Power DVD™ and Roxio Creator™ Dell Ed
- 80GB SATA 3.0Gb/s with NCQ and 8MB DataBurst Cache™
- Dual port Ethernet adapter (optional)
- 256MB PCIEx16 Nvidia NVS 290, Dual Monitor DVI capable
- Lead Free – RoHS compliant

Slot configuration

Dual video graphics is the default option provided with the T3400 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 MT PCI based NIC Server adapter is supplied with Honeywell Configured Dell T3400 Workstation. T3400 platform supports optional PCIE based NIC adapters, Intel Pro 1000 PT Single and Dual Port or Intel Pro 1000 ET Dual port adapters. Use Slot-3 for Optional NIC adapters.

Table 1-1 Slot configuration for Experion systems

Slot No	Slot Type	Description
Slot-1	PCI	Dual Intel Pro 1000MT Ethernet
Slot 2	PCIEx16	Nvidia Quadro NVS290 Dual display controller
Slot 3	PCIEx4	-
Slot 4	PCIEx16	Reserved for eSATA bracket
Slot 5	PCI	Empty or Power Adapter Harness
Slot 6	PCI	Empty

Additional components

The following is a list of options that can be configured in your workstation.

Model number	Description
NE-NICS01	Intel PRO/1000 MT Dual Port Server Adapter
MZ-PCEB23	Intel PRO/1000 GT Desktop Adapter
MZ-PCEM06	1GB Memory Expansion (2x512MB)
MZ-PCEM07	2GB memory Expansion (2x1GB)
NE-NICS03	NIC card PCIE GB ET Chipset
NE-NICSS1	Card, Single NIC PCIE, Server
NE-NICS02	NIC card, PCIE Dual Port STP

Power cords

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

Model number	Description	Part No
MZ-PCWS02	50Hz/240V and a Desktop (AC Power Cord, 220V)	51305557-100
MZ-PCWS02	60Hz/120V and a Desktop (CSA/CE/FCC LOGO).	51107941-113

Memory configurations

The standard memory installed in the T3400 Honeywell workstation is 1 GB (2x512MB). You can increase the memory size up to 4 GB. 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 identify to the supplier what memory shall be added to the workstation.

Model number	Description
MZ-PCEM06	1GB Memory Expansion (2x512MB)
MZ-PCEM07	2GB memory Expansion (2x1GB)

Memory configuration for 1GB, 2GB, 3GB, and 4GB

Refer to the following table to configure the memory devices as per your requirement.

DIMM socket	Memory size			
1	512MB	512MB	512MB	1GB
2	512MB	512MB	512MB	1GB
3		512MB	1GB	1GB
4		512MB	1GB	1GB
Total Memory	**1GB**	**2GB**	**3GB**	**4GB**

1.3 Workstation information

Honeywell documentation

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

Table 1-2 Honeywell publications

Publication	Contains information on
ADP01: *Honeywell Peripheral Adapters*	Contains information for using the

	OEP/IKB adapter with workstation that does not have the ISA card.
RE02: *Long-Haul Remote Systems Installation and Upgrade*	Contains information for using Honeywell's long-haul remote (300 feet) option.
FE05: *Fault Tolerant Ethernet Installation and Service Guide*	Contains information for installing and using FTE on a TPS or Experion PKS node.

Dell documentation

Table 1-3 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 inside 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	How to set up the workstation How to care for the workstation Troubleshooting information How to run the Dell Diagnostics How to open the workstation cover How to locate other documentation	Workstation package For more information, refer to www.dell.com
Dell Precision™ Workstation T3400 User's	How to remove and replace parts	Product Documentation CD

Publication	Contains information on	Is available with…
Guide	Technical specifications How to configure system settings How to troubleshoot and solve problems	For more information, refer to www.dell.com
The *Dell Precision™ T3400 Service Manual*.	Details on workstation configuration. How to remove and replace parts	Product Documentation CD For more information, refer to www.dell.com

1.4 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 1-4 Temperature

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	N/A	120 (90-135) VRMS	1.0 Arms	375 Watts Max

Assembly		240 (180-265) VRMS	0.6 Arms	

Weight and dimensions

Description	Height	Width	Depth	Weight
Assembly	448 mm	171 mm	467 mm	17.7 Kg depending on options

Hard disk specifications

The T3400 Honeywell workstation has two internal bays with one internal 80 GB or larger SATA hard drive. There is no option to add a second hard drive.

Operating power requirements

Table 1-5 Specifications for hard drive

Description	DC 5 volt Power(typ)	DC 12 volt Power (typ)	DC Power (Other)	AC Power
80 GB Hard Drive	12.60 Watts	12.60 Watts	N\A	N\A

Maximum weight and dimensions

Description	Height	Width	Depth	Weight
80 GB Hard Drive	26.1 mm	101.6 mm	146.99 mm	0.580 kg

Removable media

The T3400 Honeywell workstation has one 3.5-inch bay, configured with one removable media drive is a SATA DVD±RW drive, connected to a SATA port on the motherboard.

Description	DC 5 volts Power	DC 12 volts Power	DC Power (other)	AC RMS Current	AC Power
DVD+/-RW	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 T3400 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 T3400 Honeywell workstation.

Monitor

The T3400 Honeywell workstation supports industrial standard video format (1280X1024, 1600 X1200 at a refresh rate of 60 Hz for FPD), and can be configured only with a single or dual screen option.

ATTENTION

Touch screen option is not available in the T3400 Honeywell workstation.

Printer

The T3400 Honeywell workstation can be configured with either a laser or a dot matrix printer through USB, Parallel or Ethernet.

System specifications

Table 1-6 System specifications

Microprocessor	
Microprocessor	Single Intel Core2 Duo E8400 processor 3.00GHz with 1333MHz FSB
Level 2 Cache(L2)	6MB Shared Cached (or better)
Chipset	Intel® X38 Chipset
External Peripherals	
Keyboard	Entry Level, USB, No Hot Keys keyboards
Mouse	Dell USB 2-Button Entry Mouse with Scroll (equivalent or better)

Expansion Slots	
Bus Type	o 2 PCI-E x16 graphics slot o 1 PCI-E x8 slot wired as x4 o 3 PCI 32bit/33MHz slot with support for 5v cards
Drive Bays	
Internal	(2) 3.5 drive bays
External	(1) 3.5” Flex bay for floppy drive and (2) 5.25”
Memory	
DIMM slots	Four
DIMM capacities	512 MB,1 GB and 2GB DDR2 ECC
Standard SDRAM	1GB 667MHz DDR2 ECC (2 x 512MB)
SDRAM Expandability	Up to 8 GB 667 MHz ECC total
Drives	
Hard Drive	80GB SATA 3.0Gb/s with NCQ and 8MB DataBurst Cache™ minimum
DVD	16X DVD±RW
Video	
Video Type	256MB PCIE x16 Nvidia NVS 290, Dual Monitor DVI Capable
Video Memory	256MB Minimum
Display	1280 X 1024 24 bit Color, Non-Interlaced minimum
Audio	
Audio Type	Internal chassis Speaker
Network interface	
Network	Integrated Broadcom® 5754 Gigabit Ethernet controller

Power supply unit	
Wattage	375 watts (W) minimum (equivalent or better)
Voltage	90 to 135 volts @ 50/60 Hz 180 to 265 volts @ 50/60 Hz
Dissipation	1279 BTU/hr
Backup battery	3-V CR2032 lithium coin cell
Physical	
Form Factor/Configuration	Mini-Tower
Width	6.8"
Height	17.64"
Depth	18.4"
Weight	39 lb
Ports	
Serial	One 9-pin connectors, 16550-compatible
Parallel	One DB-25 pin connector (bi-directional)
LAN	One RJ45 NIC connector
PS/2 style keyboard	One 6 pin mini-DIN
PS/2 compatible mouse	One 6 pin mini-DIN
Stereo in/out	1 Line In and 1 Headphone connectors on back panel, 1 Microphone and 1 Headphone on front panel
Microphone	Microphone 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 T3400 Honeywell workstation.

Installation tasks

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

Table 2-1 Major installation tasks

✓	Task
	Power and grounding requirements
	Installing optional components
	Installing the workstation and connecting the cables
	For short, haul remote: *Remote Peripheral Systems Installation and Upgrade (RE01).* For long, haul remote: *Long-Haul Remote Systems Installation and Upgrade (RE02).*

Before you begin

Ensure that you perform the following tasks.

- Ensure that the cabinet is properly grounded.
- Unpack the workstation from the box and verify the parts.
- Place the server 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

53895

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

It is strongly recommended that the power cord is connected 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 back panel connections

The following figure shows the back panel of the workstation and identifies the connectors for all devices.

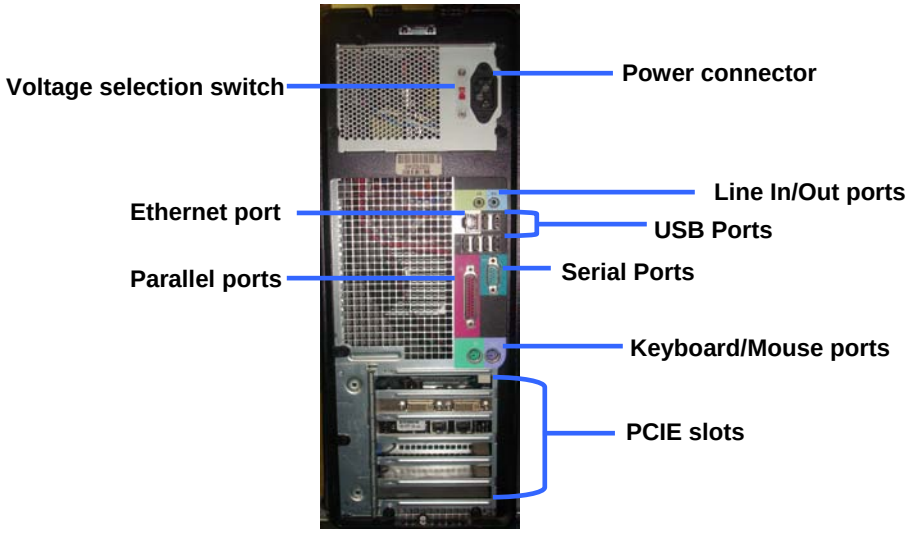


Figure 2-1 T3400 Honeywell workstation back panel

2.4 Installing optional components

Honeywell provides a number of optional components that can be installed in your workstation. Each of the following options is packaged with installation instructions.

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

2.5 Installing the workstation and connecting the cables

Perform the following steps to install the workstation as a tower unit and connecting the cables to the back panel of the workstation. See 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 a 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	If you have a standard USB keyboard, plug it into a USB port. If you have a PS/2 keyboard, plug it into the PS/2 purple keyboard port.
6	If you have a standard USB mouse, plug it into a USB port. 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.

Step	Action
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.
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.

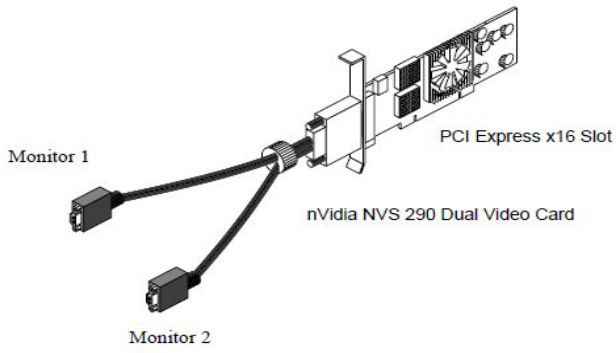
Connect remaining cables and power

Perform the following steps to connect the remaining cables to the back panel of the workstation. See 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	If you are not using Fault Tolerant Ethernet (FTE), connect the Ethernet cable to the RJ-45 connector on the Network Interface Card. 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

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

Step	Action
1	Connect the single high density DMS-59 to VGA/DVI-D dongle cable to the display controller. For Desktop configuration, Primary display is Left and secondary display is right. 
2	Secure any loose cables, and verify that all cables have proper strain relief.

2.6 Connecting Adapters

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.

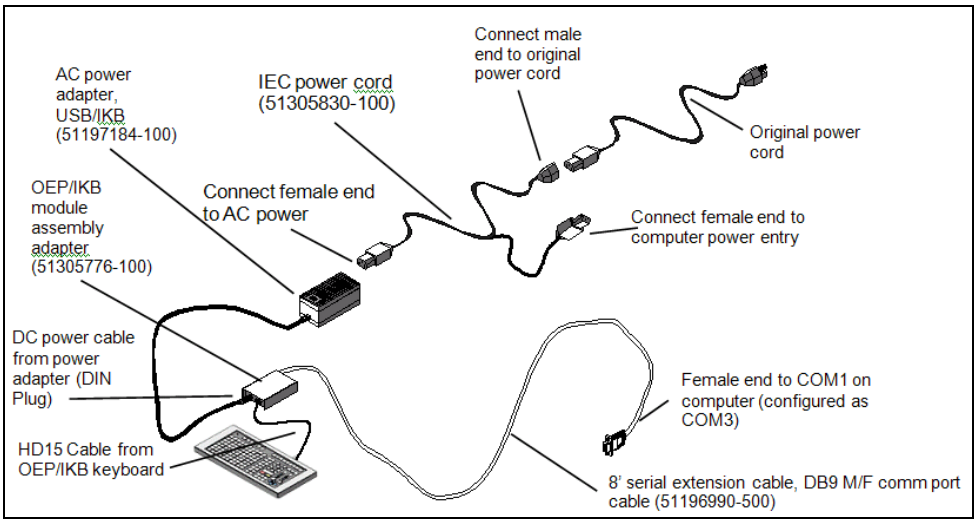


Figure 2-2 OEP/IKB adapter connections for OEP

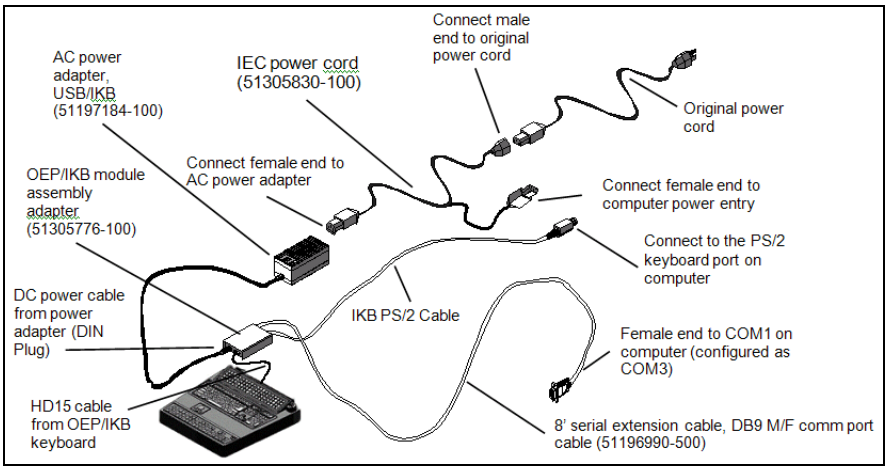


Figure 2-3 OEP/IKB adapter connections for IKB

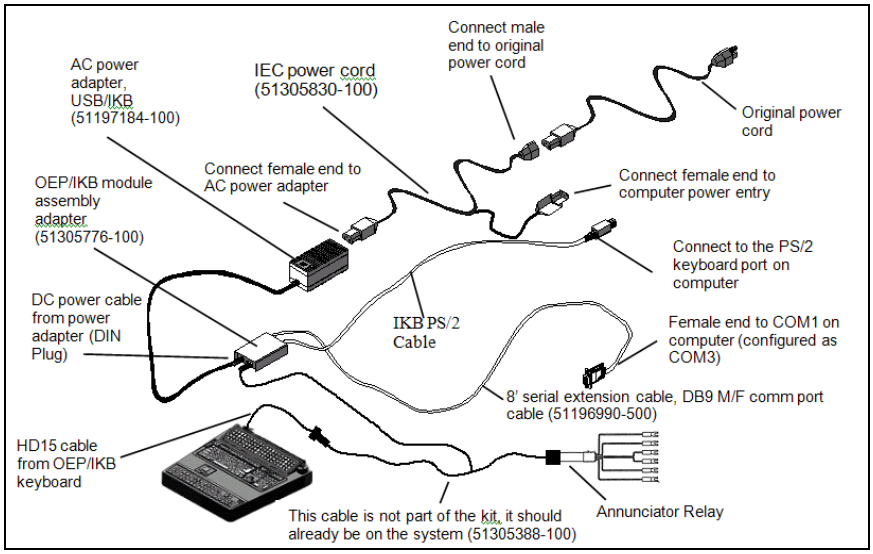
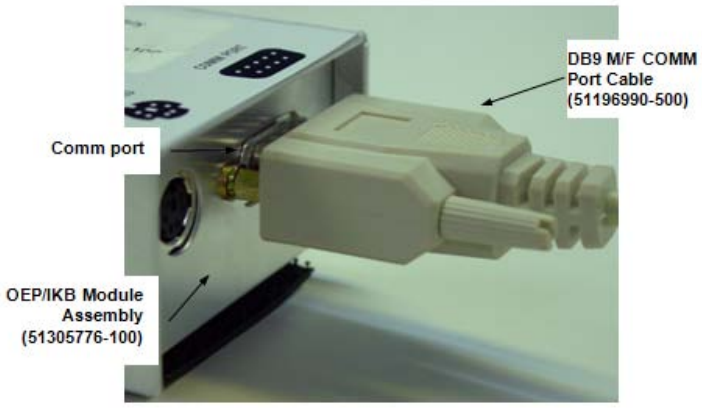


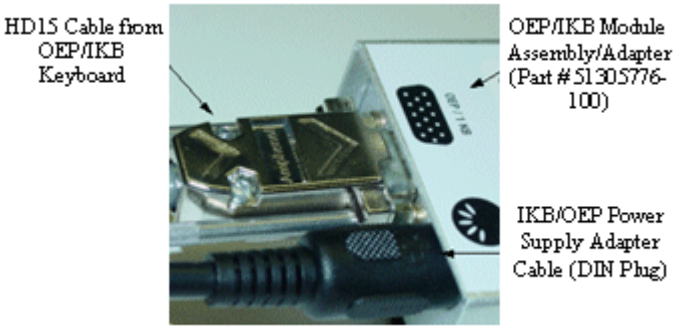
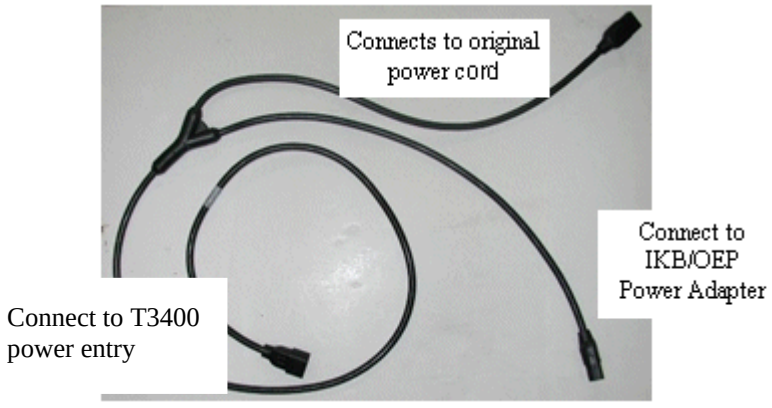
Figure 2-4 OEP/IKB adapter connections for IKB with annunciator relay

Install OEP/IKB adapter

Perform the following steps to connect 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	Connect the IEC power cord (51305830-100): o Connect one female end to the OEP/IKB power adapter (51197184-100). o Connect the other female end to the T3400 power entry. o 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 T3400 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™ PowerEdge™ T3400 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.

Step	Action
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**.

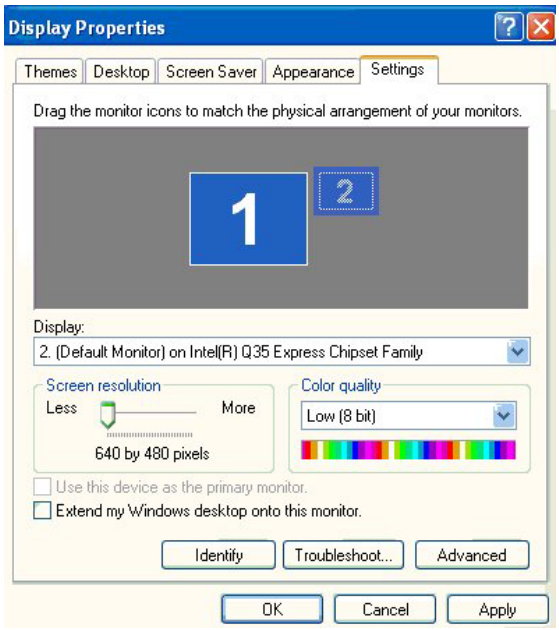
3.2 Configure monitors with NVIDIA NVS 290 card

Perform the following steps to configure the dual video display connectors using the NVIDIA NVS 290 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**.
7	Click **Apply**, and then click **OK**.

3.3 Network connections

Ethernet network

T3400 Honeywell workstation must be connected to an Ethernet network. Ethernet 10/100/1000 Base T connection is standard on the T3400 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.

Network controller model numbers

Model no	Description
NE-NICS01	Intel PRO/1000 MT Dual Port Server Adapter
MZ-PCEB23	Intel PRO/1000 GT Desktop Adapter
NE-NICS03	NIC Card PCIE GB ET Chipset
NE-NICSS1	Card, Single NIC PCIE, Server
NE-NICS02	NIC card, PCIE Dual Port STP

4. Servicing

4.1 Before you begin

ESD HAZARD

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.

CAUTION

Before you begin any of the procedures in this section, refer to the safety instructions in the *Dell System Information Guide*.

ATTENTION

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

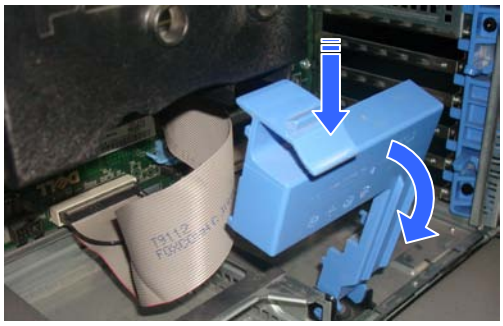
	**CAUTION** Be careful not to damage the EMI gasket fingers when removing/installing boards.
	**ESD HAZARD** Use a grounding strap and grounded work surfaces and equipment when handling any electrostatically sensitive components such as the video cards, NIC adapter cards, and SCSI controller cards. Store and transport parts only in electrostatically safe containers.

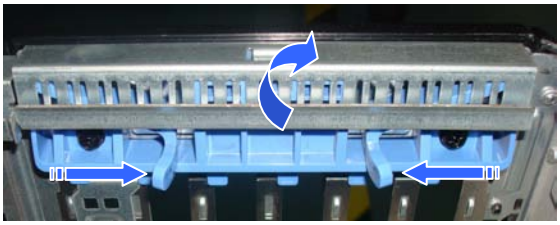
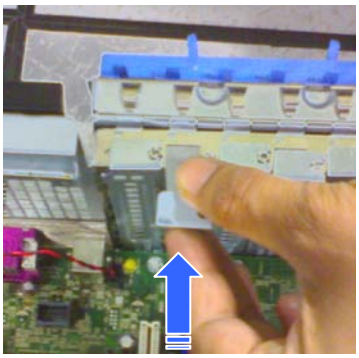
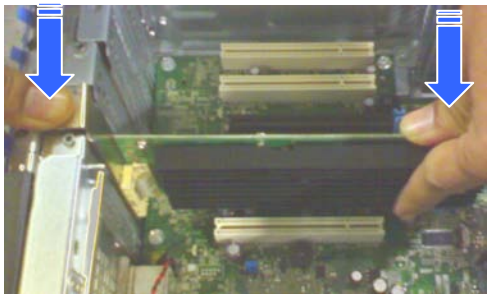
Replacing the video card

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

Figure 4-1 NVS290 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. 

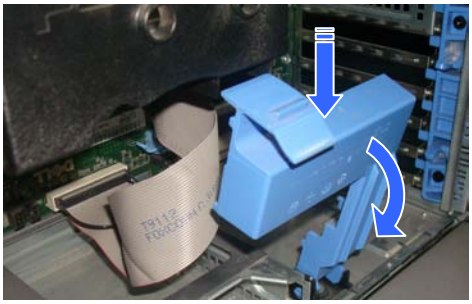
Step	Action
4	Press the blue plastic card retention door and pivot the door open. 
5	Remove the filler bracket from the slot 2. 
6	Insert the new single/dual video card in the PCIE slot 2. 
7	Replace the cardholder and card retention arm, making sure the tab locks into place.
8	Replace the side cover.
9	Connect cables to the back panel of the video card.

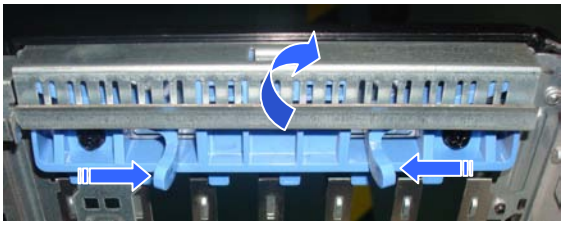
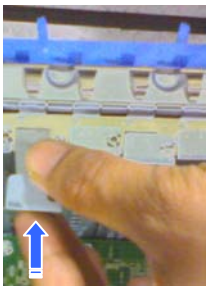
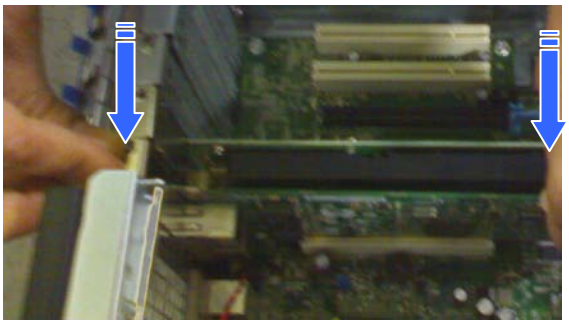
Replacing the dual NIC

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

Figure 4-2 Intel Pro 1000 MT 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.*

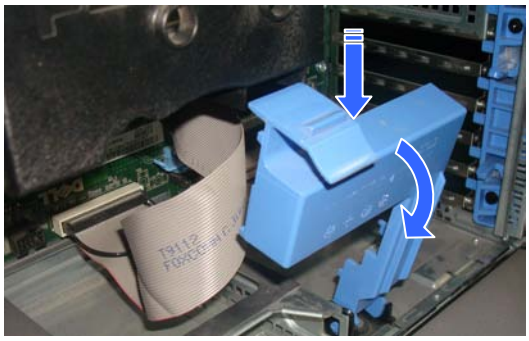
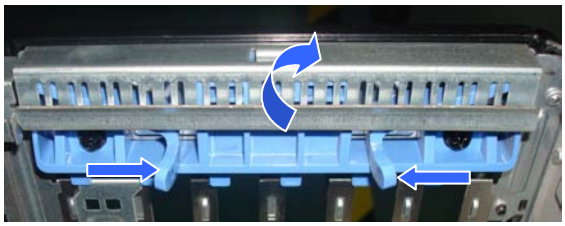
Step	Action
1	Remove the cables from back panel of the video card.
2	Remove the side cover.
3	Press the blue release tabs on the card retention door and pull the door to open. 

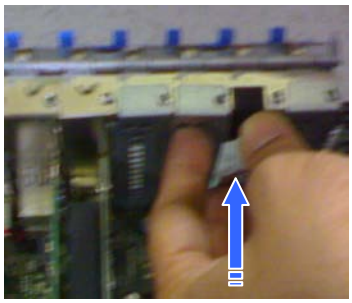
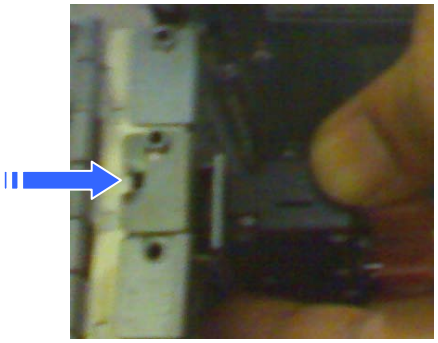
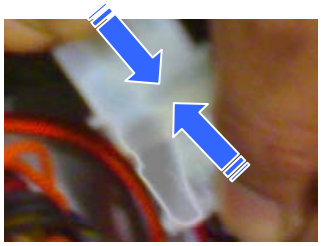
Step	Action
4	Press the blue plastic card retention door and pivot the door open. 
5	Remove the filler bracket from the slot 1. 
6	Insert the new NIC card in PCI slot 1. 
7	Replace the cardholder and card retention arm making sure the tab locks into place.
8	Replace the side cover.

Step	Action
	ATTENTION You need to reconnect your FTE cables according to the procedures in the *FTE Installation and Service Guide*, to verify if the two connectors on the NIC are connected to the right switches.
9	Connect cables to the back panel of the NIC card.

Replacing the power adapter card

The power adapter card is located in the PCI slot 5 of the workstation. Perform the following steps to replace the power adapter card.

Step	Action
1	Remove the cables from the power adapter.
2	Remove the side cover.
3	Press the blue release tabs on the card retention door and pull the door to open. 
4	Press the blue plastic card retention door and pivot the door open. 

Step	Action
4	Remove the filler bracket from the slot 5. 
5	Insert the new power adapter card in PCI slot 5. 
6	Connect the 4-pin molex connector on power adapter card assembly's cable, harness to the Y power cable. 
7	Replace the cardholder and card retention arm making sure the tab locks into place.
8	Replace the side cover.
9	Connect cables to the back panel of the power card.

Adding additional memory

ESD HAZARD

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

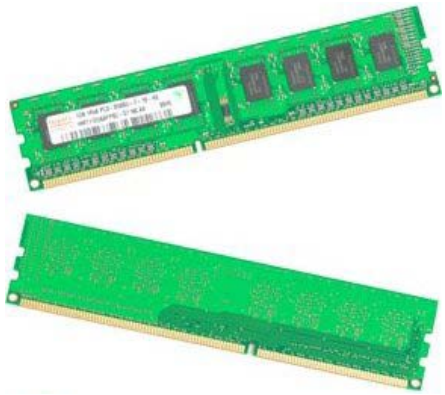
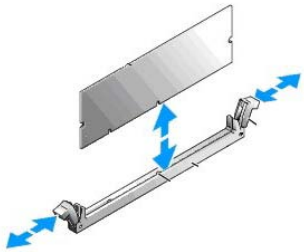
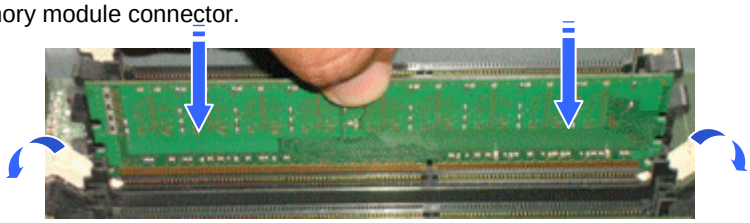
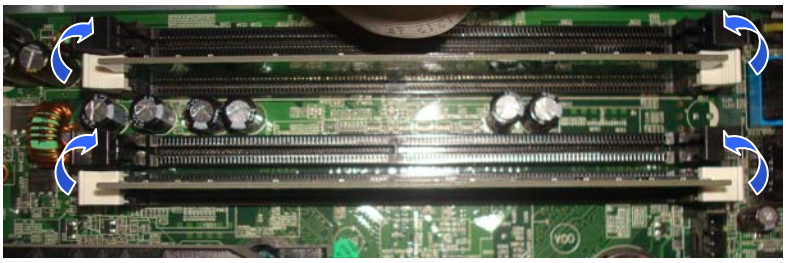


Figure 4-3 Memory cards

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

Step	Action
1	Remove the side cover.
2	Press out the securing clip at each end of the memory module connector. 

Step	Action
3	Align the notch on the bottom of the memory module with the crossbar in the memory module connector. 
4	Insert the module into the connector until the module snaps into position. If you insert the module correctly, the securing clips snap into the cutouts at each end of the module. 
5	Replace the side cover.
6	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.

Set the BIOS for Non-Raid workstations with tab 100

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

*The following settings will appear only if the A11 BIOS version is installed.

Table 4-1 BIOS Settings for Workstations with a Non-Raid workstations

System	
System	Dell Precision Workstation T3400 Minitower
BIOS Version	A09/ A11
Service Tag	XXXXX
Express Service Code	XXXXX
Asset Tag	Honeywell
Processor Info	
Type	Intel® Core™ 2 Duo CPU E8400
Processor Speed	3.00GHz
Processor Bus speed	1333MHz

Processor L2 Cache	6MB
Processor L3 Cache	0
Processor ID	0001067A
Family	06
Model	17
Stepping	A
Microcode Version	00000A07/ 00000A0B*
Multiple Core Capable	Yes (Dual)
Hyper threading Capable	No
64-bit Technology	Yes (EM64T)
Memory Info	
Installed Memory	2.0GB
Memory Speed	800MHz
Memory Channel Mode	Dual Symmetric
Memory Technology	DDR2 SDRAM
DIMM 1	1GB
DIMM3	Empty
DIMM 2	1GB
DIMM 4	Empty
PCI information	
Slot ID	Connected Devices
PEG	VGA
Slot 1	Ethernet
Slot 3	Not Populated
Slot 4	Not Populated
Slot 5	Not Populated
Slot 6	Not Populated
Boot Sequence	
Onboard or USB Floppy Drive	
Onboard or USB CD-ROM Drive	
Onboard SATA Hard Disk Drive	
Drives	
Diskette Drive	Internal
SATA-0	On

SATA-1	On
SATA-2	Off
SATA-3	Off
SATA-4	Off
SATA-5	Off
SATA Operation	RAID Autodetect /AHCI
Smart Reporting	Off
Onboard Devices	
Integrated NIC	Off
Integrated Audio	Auto
USB Controller	On
Rear Quad USB	On
Rear Dual USB	On
Front USB	On
LPT Port Mode	PS/2
LPT Port Address	378h
Serial Port 1	Auto
Miscellaneous devices	
PS/2 Mouse Port	On
Video	
Primary Video	PEG
Performance	
Multiple CPU Core	On
SpeedStep	On
Virtualization	Off
Limit CPUID Value	Off
HDD Acoustic Mode	Bypass (Will not appear if A11 BIOS version is installed)
Security	
Admin password	Not set
System password	Not set
SATA-0 password	Not set
SATA-1 password	Not set
SATA-2 password	Not set
SATA-3 password	Not set
SATA-4 password	Not set
SATA-5 password	Not set
Password Changes	Unlocked

Chassis Intrusion	Off
TPM Security	Off
Execute Disable	On
Comptrace®	Deactivate
Power Management	
AC Recovery	Off
Auto On Time	Off
Auto Power Time	
Low Power Mode	Off
Remote Wakeup	Off
Suspend Mode	S1
Maintenance	
Service Tag	XXXXX
Asset Tag	Off
ASF Mode	On
Load Default	
Event Log	
Post Behavior	
Fast Boot	On
Numlock Key	On
Post Hotkeys	Setup & Boot Menu
Keyboard Errors	Report

Exit the BIOS

Perform the following steps to quit from the BIOS settings.

Step	Action
1	Press the **ESC** key on the keyboard. A message appears asking 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 T3400 Honeywell workstation.

Table 4-2 Spare Parts

Item	Description	Part No.
Expansion RAM	512 MB, 667 MHZ, DDR2, ECC, SDRAM, as 1 unit of 512MB DIMMs. Must be installed in pairs.	51154185-900
Expansion RAM	1 GB, 667 MHZ, DDR2, ECC, SDRAM, as 1 unit of 1GB DIMMs. Must be installed in pairs.	51154185-901

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	asksscc@honeywell.com

Northern Europe

Country	Local Time Business Hours	Phone	Facsimile	Email

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	+30 21 1 268	hpscustomersupport@hon

		9493	6973	eywell.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.

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