

# The DeTwo Manual

*DDL2000, DDL2100, DDC2000, DDC2100*

**Document part number: HB-DDXX-0007**

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**05-04-07**



**Caution:** To reduce the risk of electric shock, do not remove any circuit board or power supply covers. There are no user serviceable parts inside; refer to qualified personnel.

**Warning:** To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The appliance should not be exposed to dripping or splashing and no objects filled with liquids should be placed on or near the appliance.

### Detailed safety instructions

- 1 Read these instructions
- 2 Keep these instructions
- 3 Take notice of our warnings
- 4 Follow instructions
- 5 Clean only with a dry cloth
- 6 Keep the product away from liquids
- 7 Keep all ventilation openings free from obstructions
- 8 Install in accordance with these instructions
- 9 Do not install near significant sources of heat e.g. radiators, stoves etc.
- 10 Ensure the product is properly grounded
- 11 Only use attachments / accessories specified or approved by **Amulet Hotkey**
- 12 Refer all servicing to qualified personnel

### About this manual.

This manual is designed to give you both an overview of the DeTwo systems as well as a detailed explanation on how to install, configure and use it. However, there are bound to be questions we haven't answered so don't hesitate to contact technical support at Amulet Hotkey for expert assistance.

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Check out the Tech. Support page of our website for additional contacts:

[www.amulethotkey.com](http://www.amulethotkey.com)

## Shipment.

1 Your DeTwo components were carefully packed prior to despatch to guarantee safe transit. However, we recommend that you thoroughly examine all packaging and contents for signs of physical damage before use.

2 If any damage has occurred, please notify the shipping company and your supplier immediately otherwise claims for damage or replacement may not be granted.

3 Retain the original packaging for use in the event that the equipment has to be stored, shipped or returned for service.

4 If you choose to dispose of the packaging please do so in an environmentally friendly fashion. *We like our planet and want it to last a long time.* 😊

## Conventions in this manual.

Throughout this manual we use notes in the page border to highlight points made in the main body of the text. These notes are marked with one of the following graphics:

**Warning:** Anything preceded by this icon is an important warning. You must read these and please take note of our advice.

**Hints and Tips:** Following this icon you will find what we consider to be useful advice based on our extensive experience. Take it or leave it – it's up to you.

**Info:** This icon signals information related to the main text that we thought we'd share with you. Hopefully you will find it of interest.



## Introduction

Thank you from everyone here at Amulet Hotkey for purchasing the DeTwo Digital Extension system. A great deal of time and energy has gone into making this the best and most reliable Digital extender system available.

With over 16 years experience working around the world in a variety of installations we are confident that we have provided a 'state of the art' system that will provide you with long and reliable service regardless of the application.

To get the best from this product please take time to study this manual carefully even if you are familiar with other Amulet Hotkey KVM extenders.

## **Warnings!**

**Always connect the Desktop unit to the power supply unit  
BEFORE the power is switched on.**

**The DeTwo system works by extending the PCI bus from the computer  
PCI Add-in card out to the desktop unit via a twisted pair cable link.  
Disconnecting the link cable whilst the system is in use could result in  
corruption of the host PCI bus and subsequent loss of data.**

<b>Index</b>	<b>page</b>
<b>Section 1 - Getting started</b>	
Getting Started	5
Recommended Configuration	6
Cable network specifications	6
Remote Power Control options	6
Installing the DeTwo system	7
Configuring the PCI Add-in Card	8
Installing the PCI Add-in Card	9
Configuring the Desktop unit	10
Installing 3rd party PCI cards	10
Configuring the DeTwo system	10
Installing drivers	11
Cooling considerations	11
Relocating the computer	11
Recommended deployment	12
Desktop Unit Connection Guide	13
<b>Section 2 - Operations</b>	
Overview	14
LED identification and definitions	14
Remote Power Control information	15
Resetting the computer from the desktop	16
Hot-key features	16
<b>Section 3 - Appendices</b>	
Troubleshooting	19
UTP Cable requirements	22
Fibre Cable requirements	24
Technical specifications	25



# Getting Started

Before installing your DeTwo System, refer to the following lists to ensure you have all items that shipped with the product as well as other items necessary for proper installation.

### Supplied with the Desktop Appliance

- Power supply
- Power cord
- 2 DVI-A to VGA adaptors (supplied with Desktop Appliances that provide DVI-I video)
- DeTwo Resources CD
- Printed Quick Start Guide

### Supplied with the PCI Add In Card

- PS/2 keyboard/mouse “Y” cable
- Low Profile bracket

### Additional items needed

CAT 5, 5e or 6 or fibre optic cabling is required for correct operation of the DeTwo System. Fibre Optic cabling is required for use with the DDL21\*\* & DDC 21\*\* units. This cabling is user supplied and commonly found in preexisting network installations. If you are missing any of the listed items from your shipment, contact Amulet Hotkey Technical Support. You can find contact details on page 1 of this manual.

**Note:** The examples and explanations given in this manual will refer to the products using twisted pair cable such as the DDL2000 but apply equally to the Fibre Optic units such as the DDL2100.



Contact Amulet Hotkey technical support if you think any of the parts are missing from your DeTwo package or broken.



The DeTwo Digital Extender system is available in two varieties: one uses twisted pair cable to link the desktop unit with the PCI Add-in card the other uses Fibre Optic cable. Functionally these are similar except that the fibre based units can be used over greater distances.

## Recommended configuration

- The recommended configuration requires at least two patch cables. One attaches the computer to a patch panel. The other connects the Desktop unit to an RJ-45 wall jack.
- During configuration, you may choose to keep the computer and Desktop unit together until configuration is complete. In this case, you will need to utilise one of the patch cables to complete this portion of the configuration.

## Cable/network specifications

- The cable interface between a remote Desktop unit and the computer may be CAT 5 Unshielded Twisted Pair (UTP), CAT 5e or CAT 6 cable. References to CAT 5 cable throughout this manual refer to supported types.
- The link cabling between the remote Desktop unit and the computer must be a point-to-point connection with no other active devices, such as routers or hubs, present in the link.
- Switched applications are not currently supported.
- A maximum of three cable junctions is supported between the Desktop unit or PCI Add In Card and the next buffering device.

## Remote Power Control option

The Remote Power Option allows a user to power cycle a remotely located computer from the Desktop unit. In order for this to be done, a custom Remote Power Cable (RPC) needs to be fitted inside the computer between the PCI Add-in card and the host motherboard. If you require this remote power facility please contact your DeTwo sales representative for more information. Before phoning Technical Support, ensure that you have the exact details of the PC you wish to obtain an RPC for; the cables are customised for specific PCs.



*Using a short Cat 5 patch cable to link the Desktop unit and PCI Add-in card can help simplify the configuration process.*



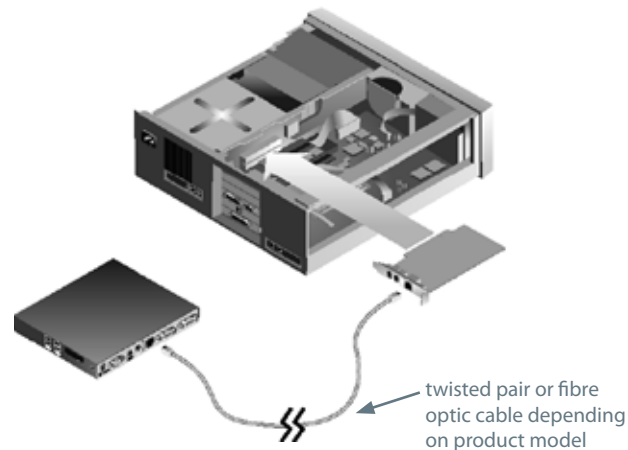
*Amulet Hotkey recommends Category 6 cabling for optimum performance.*



*A maximum of three cable junctions is the recommended limit for the connection between the PCI Add-in Card and the Desktop unit.*

## Installing the DeTwo System

1. If your computer has integrated video or audio, restart the computer and change the BIOS settings to PCI or Autodetect. Consult your computer documentation for specific instructions.



2. Save your changes and power down the computer.
3. Disconnect the keyboard, monitor, mouse and any other USB devices or audio components that will be active at the user's desktop.
4. Remove the computer cover to access the interface cards.
5. If applicable, remove the current video and audio interface cards from the computer.



*Amulet Hotkey recommends the use of an anti-static wrist strap at this time, to prevent damage being made to the PC and Card.*



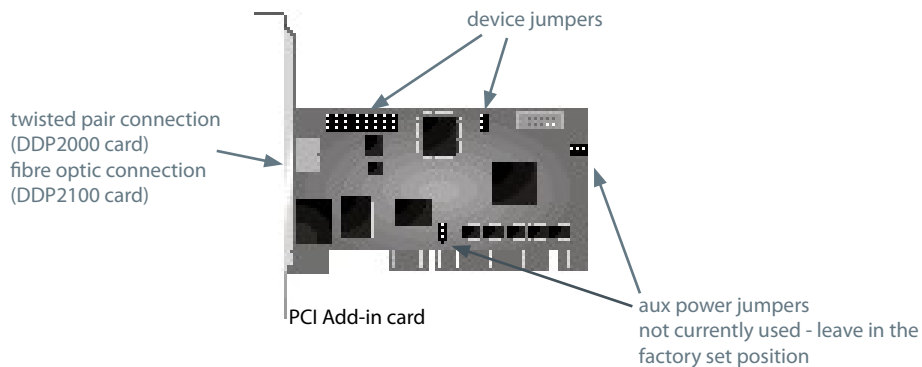
*The Desktop unit and your computer should be powered down before servicing. Always disconnect the power cord from the wall outlet.*

## To configure the PCI Add In Card:

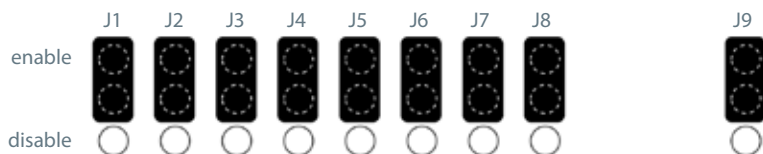
Several jumpers and two sets of connectors on the PCI Add In Card are used to configure your DeTwo System. An optional short bracket is also provided to accommodate a low profile PCI form factor.

1. Determine which PCI slot form factor is available for you to install the PCI Add In Card. The PCI Add In Card is shipped with a tall bracket mounted for use with standard PCI slots. A short bracket is provided for low profile PCI slots. You may need to change the bracket before installing the PCI Add In Card.
2. Configure the PCI device jumpers on the PCI Add In Card. These jumpers allow you to selectively disable certain components of your DeTwo System. The factory default is set with all components enabled. The diagram on the following page helps to identify the jumpers and their function.

Key:



*For most applications, the jumpers can be left in their default, factory set positions.*

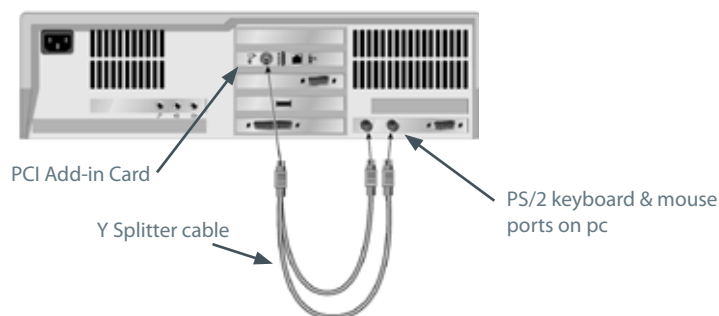


J1	USB		
J2	Audio	J7	UART
J3	Slot 0 (DDL & DDC models only)	J8	Remote FLASH write
J4	Video	J9	Local FLASH write
J5	Slot 1 (DDC models only)		
J6	Reserved		

### To install the PCI Add In Card:

1. Install and secure the PCI Add-In Card into the available PCI slot.
2. Close and secure the cover of the computer.
3. If you intend to use a PS/2 keyboard and mouse at the desktop, connect the PS/2 'Y' splitter cable between the PCI Add-in card and the appropriate PS/2 ports on your computer. Do not connect the cable if you are using a USB keyboard and mouse.

**Note:** For BIOS level access to the computer a 'Y' splitter cable must be connected from the PCI Add-in card to the PC's keyboard interface and a PS/2 keyboard must be connected to the Desktop unit.



## Configuring the Desktop unit

The Desktop unit is pre-configured to use a third party PCI Graphics card. You do not need to change the settings of J11, 12 or 13.

### To install a third party PCI Add-in Card:

1. Ensure that the Desktop unit is unplugged and powered off.
2. Locate and remove the four screws (two on each side of the unit) that allow you to remove the top cover.
3. Remove the top cover.
4. Remove the PCI slot blanking plate.
5. Install your third party PCI Add-in Card into the Desktop unit and secure it with the screw removed from the blanking plate.

### To configure the DeTwo System:

1. Connect the Desktop unit to the PCI Add-In Card inside the computer, using an appropriate patch cable.
2. Connect the keyboard, mouse, monitor and any other USB or audio components to the appropriate connectors on the Desktop unit.
3. Locate the power cord that was supplied with your Desktop unit and use it to connect the device to an appropriate power outlet.
4. Power up the Desktop unit and computer.



*If you have an RPC cable fitted to your computer and PCI Add-in Card, the computer will power up automatically as soon as you press the power button on the Desktop unit.*

## Installing Drivers

1. Once the computer boots, follow the operating system prompts for the installation of new hardware and system drivers. Drivers for devices built into the Desktop unit can be downloaded from the **Amulet Hotkey** web site.
2. Once the DeTwo System is fully configured, shut down the computer to ensure a correct software exit.
3. Power down your Desktop unit.
4. Disconnect the patch cable and all of the attached peripherals from both the computer and the Desktop Appliance.

## Cooling Considerations

Some DeTwo models are fitted with a cooling fan whilst others rely on convection to reduce the internal temperature of the Desktop unit. In either case, please ensure that air is free to circulate around the unit.

## Relocating the Computer

### To relocate the computer:

1. Move the computer to the centralized computer facility where it will reside.
2. Connect the PCI Add-in Card to your patch panel or another appropriately terminated connection point. Ensure that the connection meets the DeTwo System cabling requirements.
3. Reconnect power and computer interfaces, such as network and fibre channels, directly to the computer as usual.



*Ensure that the air vents are not blocked, as this will reduce the life of your equipment.*



*Always make sure that the Desktop unit is properly ventilated.*

## **Recommended Deployment**

The Desktop unit (DDL) is deployed at the user's desktop, enabling access to all peripherals and attached devices. The computer is safely relocated to a centralised computer facility.

### **To deploy the Desktop Appliance:**

1. At the user's desktop, connect an available patch cable from the Desktop unit into the wall jack.
2. Reconnect the keyboard, mouse, monitor and any other USB or audio components to the appropriate connectors on the Desktop unit.
3. Power up the Desktop unit first, then the computer. Verify the boot process with the user's video monitor.

# Desktop unit connection guide

Model shown is the DDL2000



*Note: for BIOS level access to the host computer you will need to attach a PS/2 keyboard at the desktop and the 'Y' splitter cable at the computer between the PCI Add-in card and the computer PS/2 ports.*



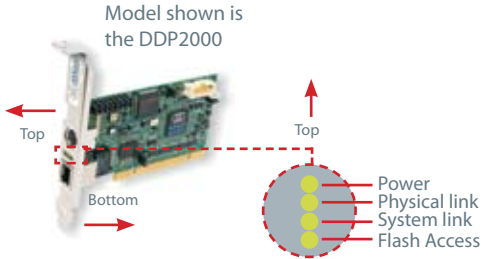
# Operations

## Overview

Operating the computer through the DeTwo System is no different than working directly connected to your computer. All peripherals operate as if directly connected, though the computer is located at a distance.

## LED identification

The following illustrations show LED orientation and identification on the Desktop unit and PCI Add In Card. Use these LEDs to determine the operational status of your DeTwo System.



## LED Definitions

### Power

As you might expect, the Power LED is off when no power is supplied to the PCI Add-In Card or Desktop unit\*. When auxiliary power is applied, this LED is dimly illuminated. When the main power is on, this LED is fully illuminated.

\*If you can make the Power LED come on without applying any power - patent the technology and make yourself a fortune. 😊

### Physical Link

The Physical Link LED is illuminated when a physical link is established between the Desktop unit and the PCI Add-In Card. It is fully illuminated when a 1 Gigabit (Gb) link has been established with another DeTwo System. The Physical Link LED blinks rapidly if the unit is connected to a device that provides a 100 Megabit (Mb) link and slowly when connected to a device providing a 10 Mb link. Therefore, if the Physical Link LED is blinking, the system will not function correctly since a 1 Gb link has not been established.

### System Link

The System Link LED is off when no power is available to the PCI Add In Card or Desktop unit. It blinks rapidly when power is available without a system link connection. It blinks slowly to indicate that a system link is established but the unit(s) on either end of the connection is in a power saving mode. The System Link LED is constantly illuminated when the DeTwo is in normal operation.

### FLASH Access

The FLASH Access LED is only ever illuminated when the FLASH memory of the PCI Add-In Card or Desktop unit is accessed. This can only be achieved using the appropriate Administration Utility. Contact your DeTwo sales representative for information on the availability of this application.

### Remote Power Control

If you have installed the optional Remote Power Control (RPC) feature, you can power your system on and off from the Desktop unit by pressing the Power button on the front panel. The PCI Add-In Card will power down the computer approximately 20 seconds after the Power button has been pressed on the Desktop unit.

The Power LED on the front panel of the Desktop unit is not illuminated when the device is powered down. It will blink **rapidly** when power is applied without a system link, **slowly** when a system link is established but the unit(s) on either end of the connection is in a power saving mode. The System Link LED is **constantly** illuminated when the system is in normal operation.



*The status of the System Link LED is also copied to the blue front panel LED on the Desktop unit.*



*Follow your operating system's instructions for shutdown prior to powering down the system, just as you would if directly connected to your computer.*

## Resetting the computer from the Desktop Appliance

If you have installed the optional RPC feature and your computer supports a Reset button, you can reset your computer from the Desktop unit. To do this, depress the Reset button on the front panel of the Desktop unit. Your attached computer will reset in three to five seconds.

## Using the Hot-key Feature

You can initiate certain operations on the DeTwo System by using the Hot-key commands. When you enter a Hot-key command on a keyboard connected to the Desktop unit PS/2 keyboard jack, the Desktop unit acknowledges the command by blinking a pattern with the keyboard Num Lock, Caps Lock and Scroll Lock LEDs.

### To use the Hot-key feature:

1. Activate the Hot-key feature by pressing and holding down the Scroll Lock key and then pressing the F12 key. Release the two keys in any order. Initially all the keyboard lock status LEDs will blink to indicate that the Hot-key feature is active, followed by the patterns as shown in the table on the following page.
2. Once the Hotkey feature is active, enter a Hot-key command. The LEDs will blink the pattern associated with the command.
3. Press Enter to execute the last valid Hot-key command. If the command you enter is not valid, the system will not execute an operation. Once the system executes a Hot-key command, the keyboard interface automatically exits the Hot-key feature.
4. Terminate the Hot-key feature by pressing the Esc key should you no longer wish to enter a Hot-key command. After the keyboard interface has exited the Hot-key feature, the lock status LEDs will return to the state they were in prior to Hot-key activation.



*The Hot-key functions are only available when a PS/2 keyboard is being used. The DeTwo system does not support hot-keys when a USB keyboard is in use.*

Hot-key command	Key sequence	Num Lock LED	Caps lock LED	Scroll Lock LED
activate hot-key	scroll lock + f12	blink	blink	blink
power off computer	S or 0	blink	off	off
power on computer	P or 1	off	blink	off
reset computer	R	off	off	blink
execute hot-key command	Enter	previous	previous	previous
execute hot-key w/o command	Esc	previous	previous	previous

## Equipment requirements

Ensure that the equipment on both ends of the link can support the Hot-key feature. The Desktop unit must have a keyboard that is connected to the PS/2 keyboard connector in order to use Hot-key commands. The Hot-key feature must not be disabled in FLASH memory by the Administration Utility. For the Hot-key power down, power up and computer reset commands to execute, an RPC cable must be fitted correctly to the PCI Add In Card and the computer.



*The functions available through the use of Hot-keys will only work if you have an RPC cable fitted between the PCI Add-in card and your computer motherboard.*



## Appendices

## Appendix A: Troubleshooting

### Desktop unit / PCI Add-In Card Troubleshooting

#### Desktop unit/PCI Add In Card Power LED not lit -

Verify that the unit/host computer is plugged into an appropriate AC outlet.

#### Desktop unit/PCI Add In Card Physical Link LED not lit -

Verify that the link cable is connected to one of the following:

- A PCI Add-In Card that is installed in a host computer. The host computer must at a minimum provide standby power.
- A Desktop unit that is plugged into an appropriate AC outlet.

#### Desktop unit/PCI Add-In Card Physical Link LED is blinking -

A blinking Physical Link LED indicates that the link is connected to a 100 Mb device (rapid blink), or a 10 Mb device (slow blink). Reconnect the link directly to the PCI Add In Card/Desktop unit.

#### Computer will not boot-

Ensure that the computer is powered up.

Check the LED status.

Verify that all cables are properly connected.

Reinstall the PCI Add-In Card into a different PCI slot.

Ensure that the video adaptor is enabled in the Desktop unit and the PCI Add-In Card.

Ensure the integrity of the PCI Add-In Card cabling. Test cabling with Time Domain Reflectometry (TDR) or other appropriate cable test device.

**No video -**

Ensure that the computer is powered.

Ensure that all video cards are removed from the computer.

Check the PCI Add-In Card and Desktop unit LEDs to ensure that computer to Desktop unit communication is functioning.

Ensure the integrity of the PCI Add-In Card cabling. Test cabling with TDR or other appropriate cable test device.

Reinstall the PCI Add-In Card into a different PCI slot in the computer.

Check your computer's BIOS settings and ensure that they are set to PCI video or Autodetect.

Disable on-board graphics adaptor in the operating system and/or BIOS.

Reset the BIOS to the default setting and reboot to allow Plug and Play BIOS to detect devices.

Uninstall and reinstall video drivers.

Check the jumper settings of the DDP Card.

**No audio-**

Plug headphones, if used, into the Desktop unit audio output jack.

If you are using speakers, ensure that they are powered and plugged into the Desktop unit audio output jack.

Ensure that no other audio cards are installed in the computer.

Ensure that audio has not been disabled in the PCI Add-In Card using the jumper settings discussed on page 8 and 9 of this manual.

Check the PCI Add-In Card and Desktop unit LEDs to ensure computer to Desktop unit communication is functioning.

Check your computer's BIOS settings and ensure that your on-board audio, if any, is disabled.

Ensure that your audio drivers are properly installed.

Ensure that any running application software that is playing music does not have the speaker muted.

**Audio files are audible, CDs are not -**

Find and enable the Enable Digital Audio option within your operating system.

**USB peripheral is inoperable -**

Ensure that your USB peripherals are plugged into the USB ports of the Desktop unit in accordance with the peripheral manufacturer's guidelines.

Check PCI Add In Card and Desktop units LEDs to ensure computer to Desktop unit communication is functioning.

Ensure that USB has not been disabled in the PCI Add-In Card or by using the DIP switch discussed on page 7 of this manual.

Ensure that your operating system supports USB connections.

Ensure that the device being connected is USB 2.0 compliant and installed according to the manufacturer's guidelines.

**Video/Audio/USB performance is sluggish -**

Ensure the integrity of the PCI Card cabling. Test cabling with TDR or other appropriate cable test device.

Check the cable connections at the Desktop unit and the PCI Add In Card and any other connections or patches in that path.

Check for correct driver operations.

Graphics performance can be improved by choosing a card with a larger video memory.

Try disabling some of your operating systems GUI features such as shadows on cursors, animated menus, contents of windows shown while dragging.

Read the paper entitled 'Extended PCI Bus Performance' included on the CD with this manual.

**PS/2 device is not functioning properly -**

Ensure that the keyboard and mouse are plugged into the appropriate Desktop unit ports.

Ensure that PS/2 "Y" cable is correctly attached from the rear of the PCI Add In Card to the PS/2 input on the back of the computer.

Ensure that the PS/2 device functions properly when connected directly to the computer.

## **Appendix B:**

### **UTP Cabling**

The performance of the DeTwo System depends on high-quality connections. Poorly installed or maintained cabling can diminish the performance of the DeTwo System.

Depending on the model you have chosen, the DeTwo System operates with either Unshielded Twisted Pair (UTP) or standard multi mode fibre optic cabling. Both of these cabling types are discussed in the following sections.

#### **UTP copper cabling**

The following are basic definitions for the three types of UTP cabling that the DeTwo System supports:

- CAT 5 UTP (4-pair) high performance cable consists of twisted pair conductors, used primarily for data transmission. The twisting of the pairs gives this cable some immunity from the infiltration of unwanted interference. CAT 5 cable is generally used for networks running at 10 or 100 Mbps.
- CAT 5e (enhanced) cable has the same characteristics as CAT 5, but is manufactured to somewhat more stringent standards.
- CAT 6 cable has the same characteristics as CAT 5e, but is manufactured to a higher standard.

#### **Wiring standards**

There are two supported wiring standards for 8-conductor (4-pair) RJ-45 terminated UTP cable: EIA/TIA 568A and B. These standards apply to installations with CAT 5, 5e and 6 cable specifications. The DeTwo System supports either of these wiring standards.

## Cabling installation, maintenance and safety tips

The following is a list of important safety considerations that should be reviewed prior to installing or maintaining your cables:

- Keep all CAT 5 runs to a maximum of 100 meters each.
- Maintain the twists of the pairs all the way to the point of termination, or no more than one-half inch untwisted. Do not skin off more than one inch of jacket while terminating.
- If bending the cable is necessary, make it gradual with no bend sharper than a one inch radius. Allowing the cable to be sharply bent or kinked can permanently damage the cable's interior.
- Dress cables neatly with cable ties, using low to moderate pressure. Do not over-tighten ties.
- Cross-connect cables where necessary, using rated punch blocks, patch panels and components. Do not splice or bridge cable at any point.
- Keep CAT 5 cable as far away as possible from potential sources of electromagnetic interference (EMI), such as electrical cables, transformers and light fixtures. Do not tie cables to electrical conduits or lay cables on electrical fixtures.
- Test each installed segment with a cable tester. "Toning" alone is not an acceptable test.
- Always install jacks so as to prevent dust and other contaminants from settling on the contacts. The contacts of the jack should face up on the flush mounted plates, or left/right/down on surface mount boxes.
- Always leave extra slack on the cables, neatly coiled in the ceiling or nearest concealed location. Leave at least five feet at the work outlet side and 10 feet at the patch panel side.
- For CAT 5 installations, choose either 568A or 568B wiring standard before beginning. Wire all jacks and patch panels for the same wiring scheme. Don't mix 568A and 568B wiring in the same installation.
- Always obey all local and national fire and building codes. Be sure to firestop all cables that penetrate a firewall. Use plenum rated cable where it is required.



*Amulet Hotkey  
recommend 568B as the  
more usual.*

## Appendix C

### Fibre cabling

#### Standard multimode fibre cabling.

The cable interface should be IEEE 802.3z 1000Base-SX standard multimode fibre-optic cabling. The following table shows the minimum link distances that must be supported by cables that are compliant with this standard.

Fibre Type	Modal Bandwidth	Max. Link Distance
62.5um MMF	160 MHz*km	220m
62.5um MMF	200 MHz*km	275m
50um MMF	400 MHz*km	500m
50um MMF	500 MHz*km	550m

Premium, or high grade, fibre cables are available, enabling reliable links of 800m or greater. If you expect your link to exceed 550m, contact your DeTwo technical support for information regarding this higher grade of fibre.

Fibre patch cables used with the DeTwo must have an LC optical connector on the end that attaches to the DeTwo. Optical connectors selected for use elsewhere in the link, such as the wall interface, are at the installers discretion.



To avoid contamination, do not touch the optical surfaces of the patch cable connectors with your fingers.



The MMF-LC sockets on the the DeTwo desktop unit and PCI Add-in card are shipped with protective dust covers installed. These covers should be retained and reinstalled whenever the fibre cable is removed, or if the product is packaged for storage or shipment.



*Dependant on fibre quality; at 62.5µm Multi Mode Fibre (MMF) distances up to 275m (902ft). 50 µm MMF, distances up to 500m.*

## Appendix D:

### Technical Specifications

#### PCI Add-in Card Specifications

PCI Available PCI slot, PCI standard version 2.3 (Alternate bracket provided to accommodate PCI Low Profile Version 2.3).

Operating Systems Microsoft Windows XP (32 & 64bit). (Driver installation may be required to enable some features of the DeTwo System. Additionally, not all features are available with all operating systems. Refer to your operating system documentation.)

#### Minimum Requirements as defined by your operation system.

Cabling 100 M CAT 5, 5e or 6, configured in a point-to-point connection; a maximum of three cable junctions between the PCI Add In Card and the Desktop unit or buffering device.

#### Desktop unit Specifications

Standard PCI Slot (Single half length or dual full length depending on model).

Audio Stereo line in and out; microphone in.

Peripherals Supports standard USB 2.0 compliant devices; PS/2 keyboard/mouse;

Standard 9-pin serial port.

Voltage 110 to 240 VAC.

Power Frequency 47 to 63 Hz.

Environmental

Temperature Operating: 10° to 35°C (50° to 95°F), Storage -40° to 65°C (-40° to 149°F), 20% to 80% (noncondensing).

Dimensions and weights.

Model	H(mm)	W(mm)	D(mm)	Weight (kg)
DDC 2000/2100	71.1	210.3	391.2	4.55
DDL 2000 /2100	53.3	210.3	152.4	2.72

## Technical Support

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