

Chapter 5 PC Hardware Project (100 points) - Shihao Guo

Information Found from Manufacturers Website (20 points)

Using the PC's Service Tag and manufacturer's website answer the following questions and provide screenshots within this document to support your answer. Hint: <https://www.dell.com/support/home/en-us>

- What is the model of the PC? (2 points) **The model of this PC is OptiPlex 780.**

 **OptiPlex 780**
Service Tag: G2TMMM1 | Express Service Code: 34999214329 | [Log in to add alias](#)
[Change product](#) Support Services:  ProSupport • Ended 05 AUG 2013 [Manage Services](#)

- What form factor is the PC? (2 points) **The form factor of this PC is the Dell's non-standard Small Form Factor.**

341-9768 : No Media Card Reader, Filler Panel, Dell OptiPlex 780 Small Form Factor [^](#)

PART NUMBER	DESCRIPTION	QUANTITY
TJ886	Assembly,Panel,Filler,3.5inch Form Factor,Black,Matrix Cypher Small Form Factor ,OP	1

- When did the warranty expire? (2 points) **The warranty expired on August 5th, 2013.**

 Support services status
ProSupport [Manage Services](#)
Ended 05 AUG 2013

- Which operating system shipped (original configuration) with the PC? (2 points) **The OS that comes with it is Windows XP 2000 with Vista Home Basic.**

421-4458 : Vista Home Basic Service Pack 2, No Media, 32 Bit English, Dell OptiPlex [^](#)

PART NUMBER	DESCRIPTION	QUANTITY
XJ3YJ	INFO, WINRE-ADDR, 200, MB-PTN	0
PJ289	INFO, VPEPR	0
R0920	Service Charge, OS, Windows XP Windows 2000, DirectX	0

- Did the PC ship with a monitor? (2 points) **Yes, it does ship with a monitor.**

320-1090 : Dell Professional 19 Inch Monitor P190S, HAS, USB, OptiPlex, Precision, Latitude, Enterprise

^

PART NUMBER	DESCRIPTION	QUANTITY
4FM7K	Display, Flat Panel Display, 19, P190ST, Black, Mexico/Mexican	1

6. What is the latest Windows OS version that the Dell website has drivers available for? (2 points) **The latest Windows OS version on this PC is Windows 7.**

Supported Operating Systems

Your OptiPlex 780 supports these operating systems:

[Change Product](#)

- BIOS
- Windows 7, 32-bit
- Windows 7, 64-bit
- Windows Vista, 32-bit
- Windows Vista, 64-bit
- Windows XP

7. Are there 32-bit and 64-bit drivers available? (2 points) **Yes, this PC supports both 32-bit and 64-bit drivers.**

Supported Operating Systems

Your OptiPlex 780 supports these operating systems:

[Change Product](#)

- BIOS
- **Windows 7, 32-bit**
- **Windows 7, 64-bit**
- **Windows Vista, 32-bit**
- **Windows Vista, 64-bit**
- Windows XP

8. What is the release date for the last BIOS firmware update? (2 points) **The last release date of BIOS for this PC is September 3rd, 2013.**

OptiPlex 780 (109)		This Device: G2TMMMM1 (6)		0 Selected	Download Selected
<input type="checkbox"/>	NAME ▾	<input type="checkbox"/>	IMPORTANCE ▾	<input type="checkbox"/>	CATEGORY ▾
<input type="checkbox"/>	Dell OptiPlex 780 System BIOS A15	<input type="checkbox"/> RECOMMENDED	<input type="checkbox"/> BIOS	<input type="checkbox"/> 03 Sep 2013	Download ① ^
	Version A15, A15 Older versions				Download Type System BIOS
	File Name 0780-A15.exe 				File size 2.51 MB
	Description Dell OptiPlex 780 System BIOS A15				
	Important Information				
	1. Integrate Intel MEFW 5.2.71.1048 into ME5 platforms. 2. Update Intel MEBx to 5.1.0.0020				

9. What documentation is available for this PC? (2 points) **The documentation that is available on this PC is the *Dell OptiPlex 780 Service Manual*.**

10. Is there documentation on how to remove the system cover, hard drive, etc... for this exact PC (if so, provide the URL)? (2 points) **There's none for this exact PC, but it has one for the same exact model:** (https://dl.dell.com/manuals/all-products/esuprt_desktop/esuprt_optiplex_desktop/optiplex-780_service%20manual3_en-us.pdf)

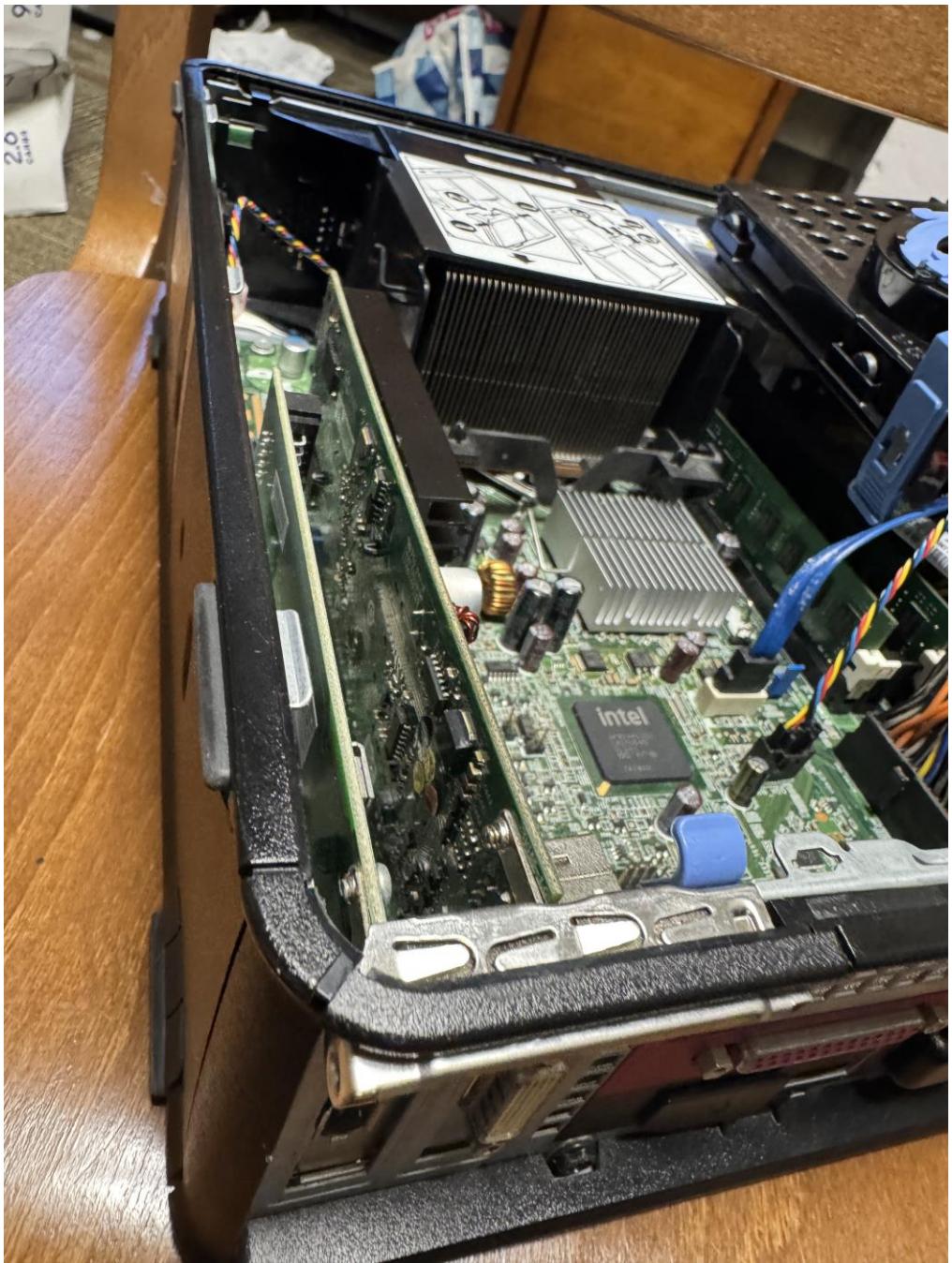
Removing the PC Components (50 points)

Carefully remove the following PC components and provide the information requested. **Provide images within this document to support your answers.** **Be sure that the PC is unplugged** and if you do not have an anti-static wrist band be sure to ground yourself by touching the metal case / chassis.

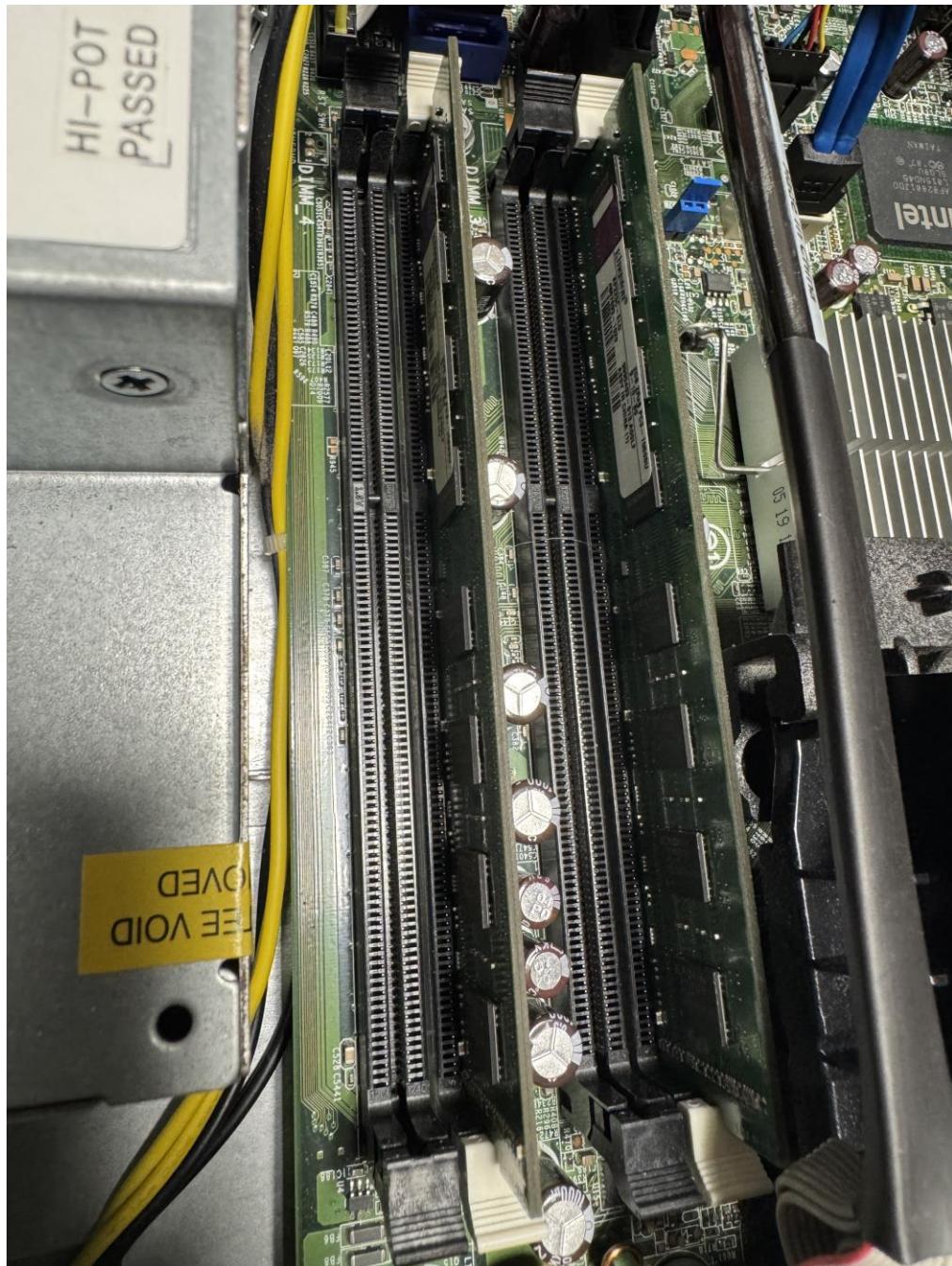
1. Remove the cover from the PC case / chassis (provide an image). (2 points)



- a. How many PCI cards are currently installed? (2 points) **There are two PCI cards installed.**



- b. How many memory DIMMs are installed? (2 points) **There are two memory DIMMS installed.**



- c. What is the manufacture of the hard drive? (2 points) The manufacturer of the hard drive is Western Digital (WD).



- i. What is the capacity in GBs? (2 points) **Consist of 320GB of capacity.**
- ii. What is the speed of the hard drive? (2 points) **The speed of the hard drive is 7200RPM.**

320GB

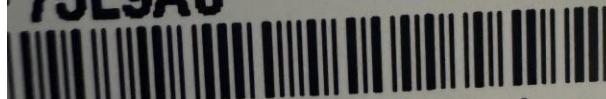
1D - 12555 - 078 - 0FCF - A01

Interface SATA
Capacity 320GB
RPM 7200
Firmware A0

Y935116



75L9A0



Did if seal,
or damaged.

0ACFD222E

2010

T2CE

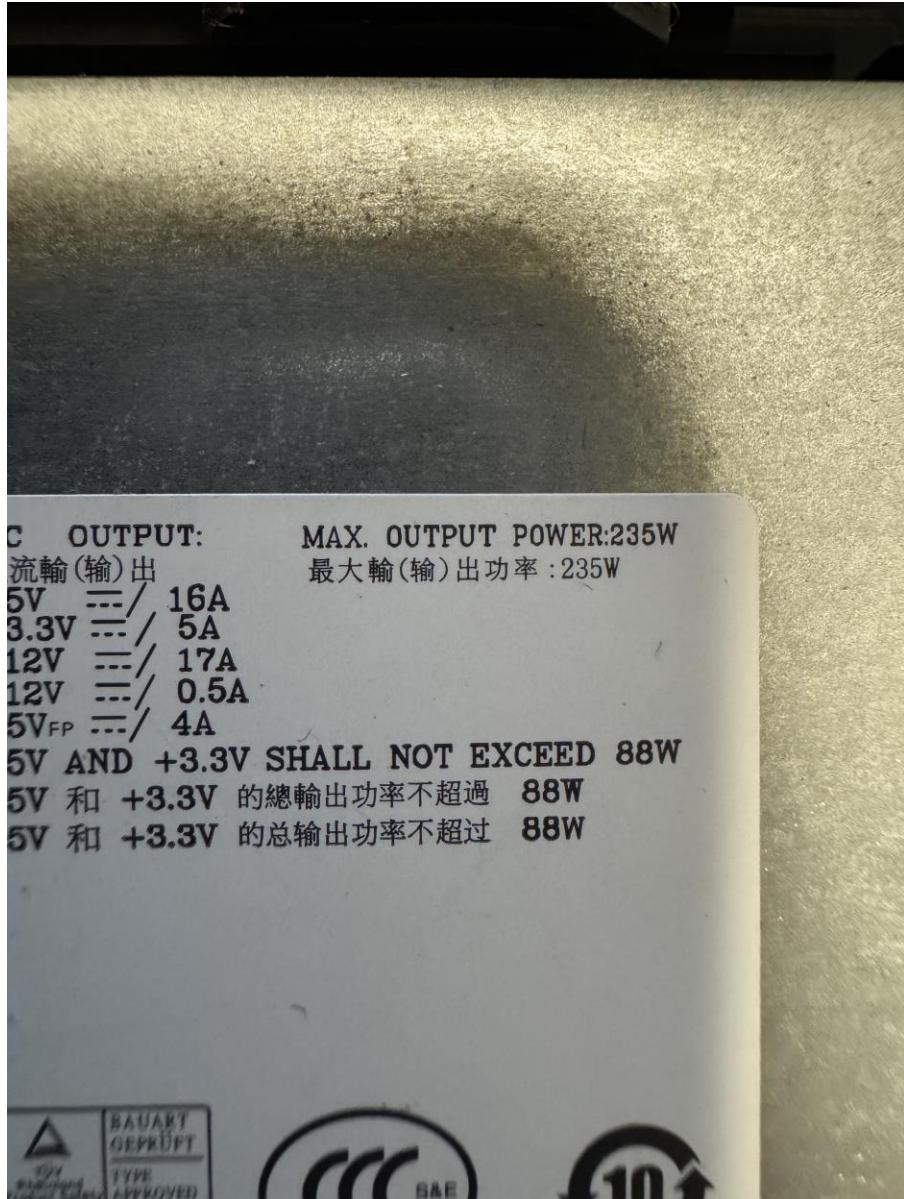
Do not cover
any drive holes.

LBA : 625142448

5VDC : 0.65A

12VDC : 0.50A

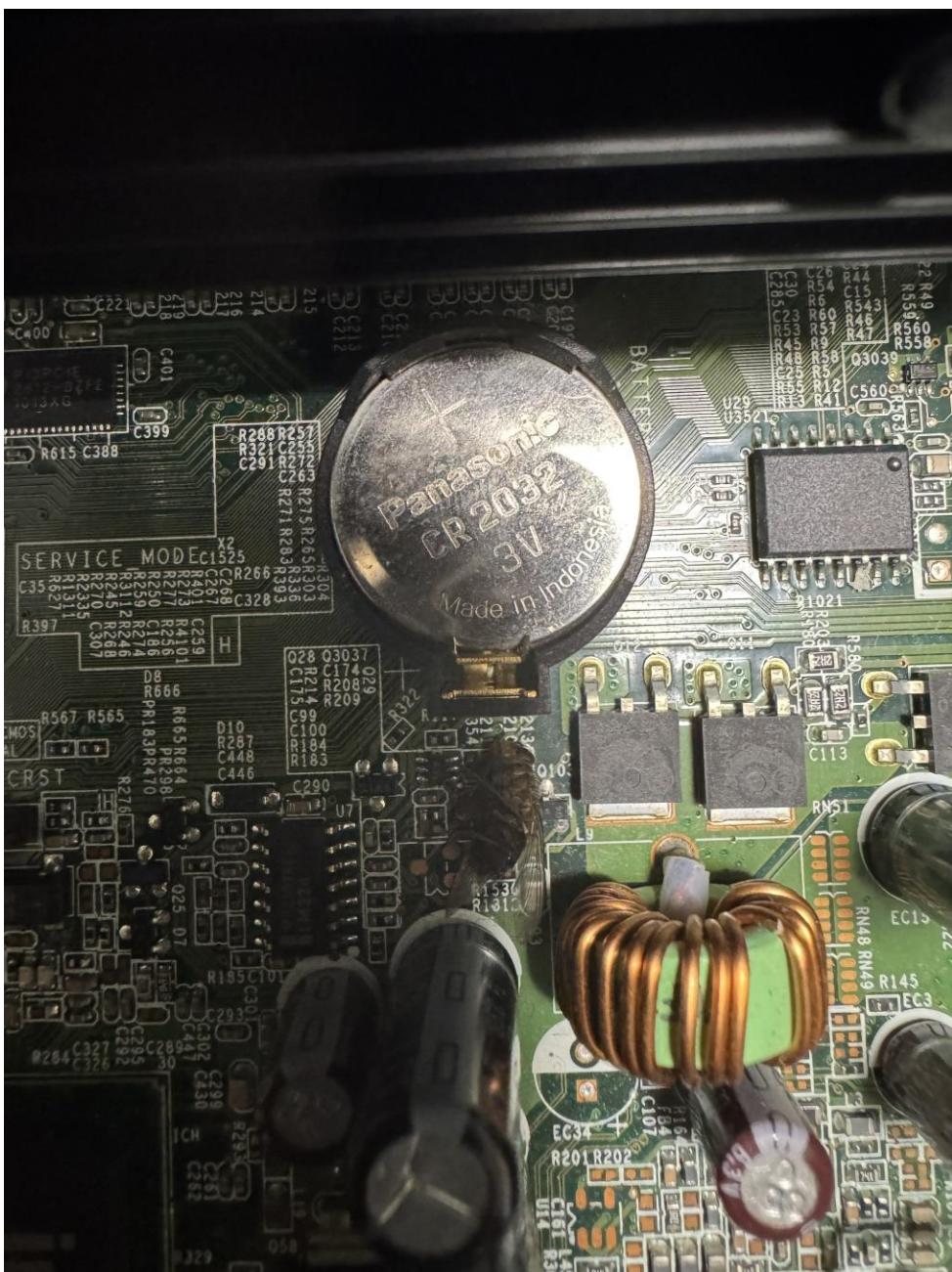
- d. What are the max watts of the power supply? (2 points) The maximum output watt of the power supply is 235W.



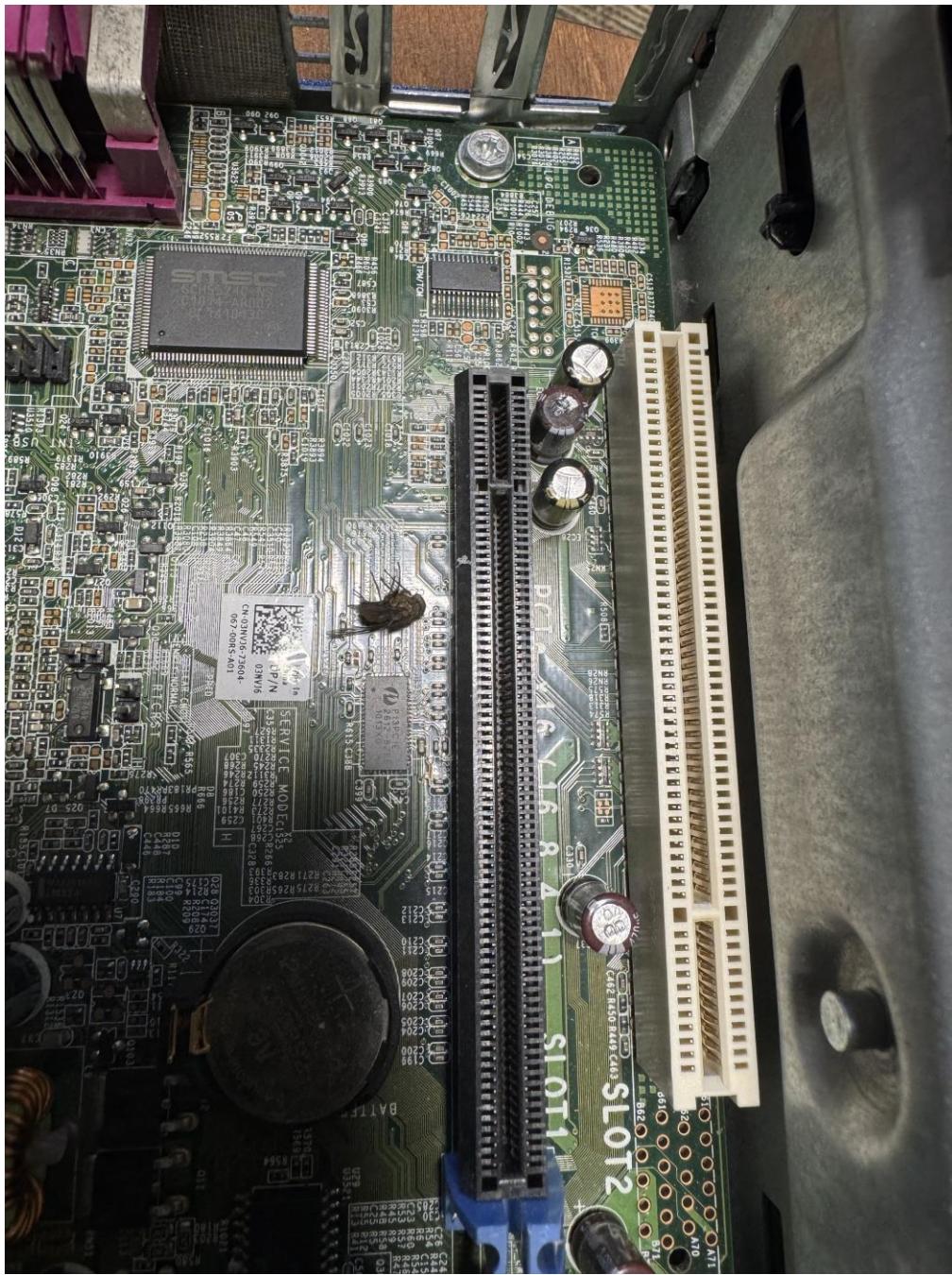
2. Remove the hard drive from the case. Don't forget to unplug the SATA cable, power connection, and fan connection. Provide an image of the hard drive outside of the PC. (2 points)



3. Where is the CMOS battery located? (2 points) The CMOS battery is located on the motherboard right next to the expansion slots. (I've also found a dead fly inside the case; can I get extra credit for solving this fly-icide mystery?)
 - a. What type of battery is used? (2 points) The type of battery that is used in this PC is the CR2032 3V coin cell battery by Panasonic.



4. Remove the PCI cards. Hint: Push the blue tab toward the power supply to remove the PCIe card. Provide an image of the empty slots. (2 points) [RIP fly](#).



- a. What type of card was installed in the 16x PCIe slot? (2 points) **The card that was installed in the 16x PCIe slot is the video card with DVI port.**



- i. What is the manufacturer and model #? (2 points) **The manufacturer of the video card is Nvidia with model number: P805**



- b. What type of card was installed in the PCI slot? (2 points) **The card that was installed in the PCI slot is the IEEE1394 FireWire controller card.**



- i. What country was this card manufactured? (2 points) **The card was manufactured in China.**



- c. Are these PCI cards low profile? (2 points) Yes, the PCI cards on this PC are low profile. On the manufacturer's website, system specific is listed as low profile for Small Form Factor.

System Configuration

320-1138 : 256MB NVIDIA GeForce 9300 Graphcis Dual DVI and TV Out, Low Profile, OptiPlex 780 Small Form Factor and Desktop

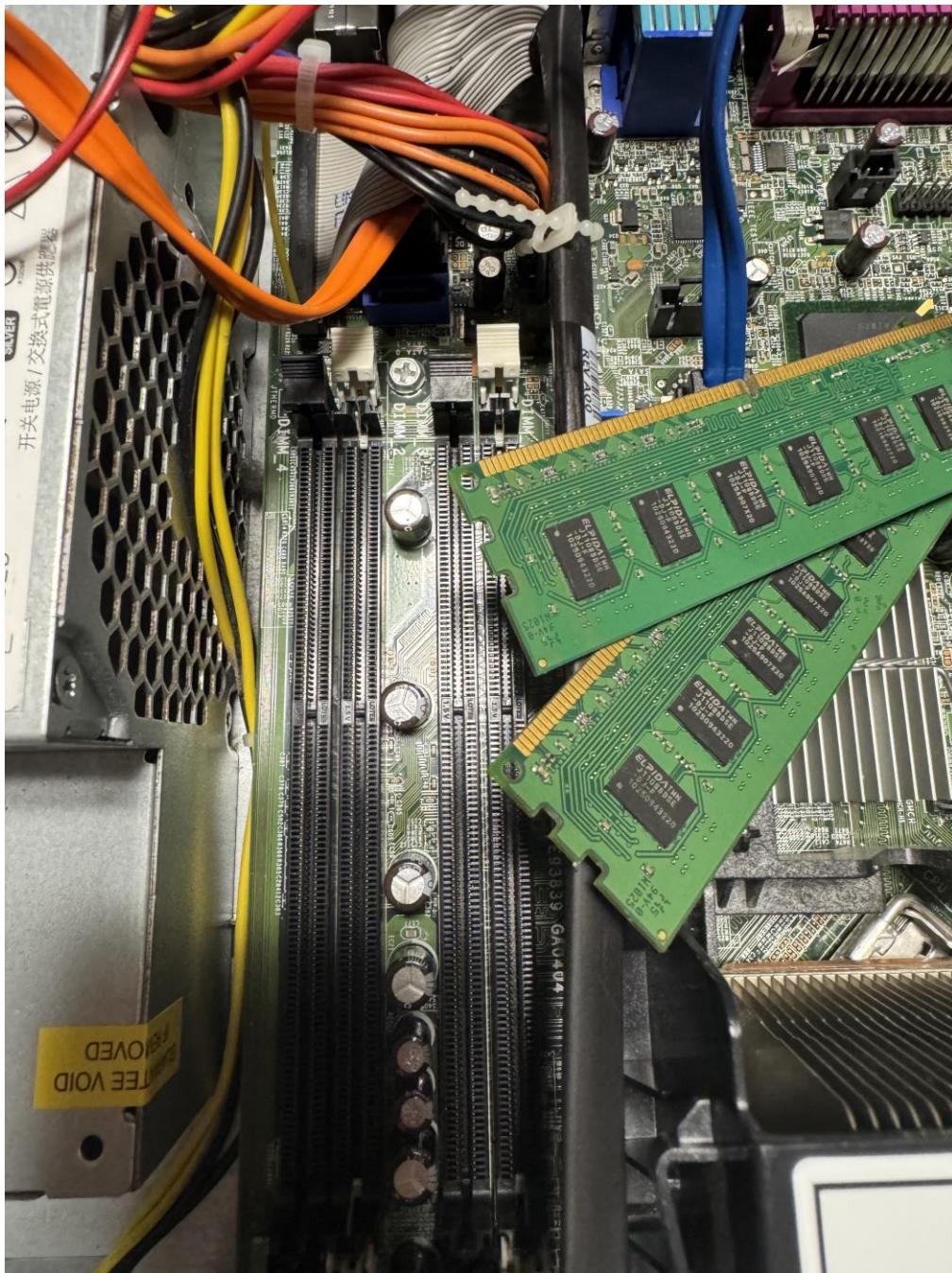
PART NUMBER	DESCRIPTION	QUANTITY
H9361	ASSY,CBL,VID,DUAL,DVI,ULD	1
N751G	Card,Graphics,256,Loop,OUGA6N	1
MW501	Plug,VIDEO,JACK,Black,MSMT/MCSF	1
F153G	PLUG,DPRT,JACK,OPTI,960	1
0N356	Information,Windows XP 32 Bits,Color	0
P2720	Information,DirectX,90002	0

System Configuration

341-5471 : 1394 Controller Card, Low Profile, Dell OptiPlex Desktop

PART NUMBER	DESCRIPTION	QUANTITY
J886H	CRD,CTL,1394A,PCI,HH,LSI,ULD	1

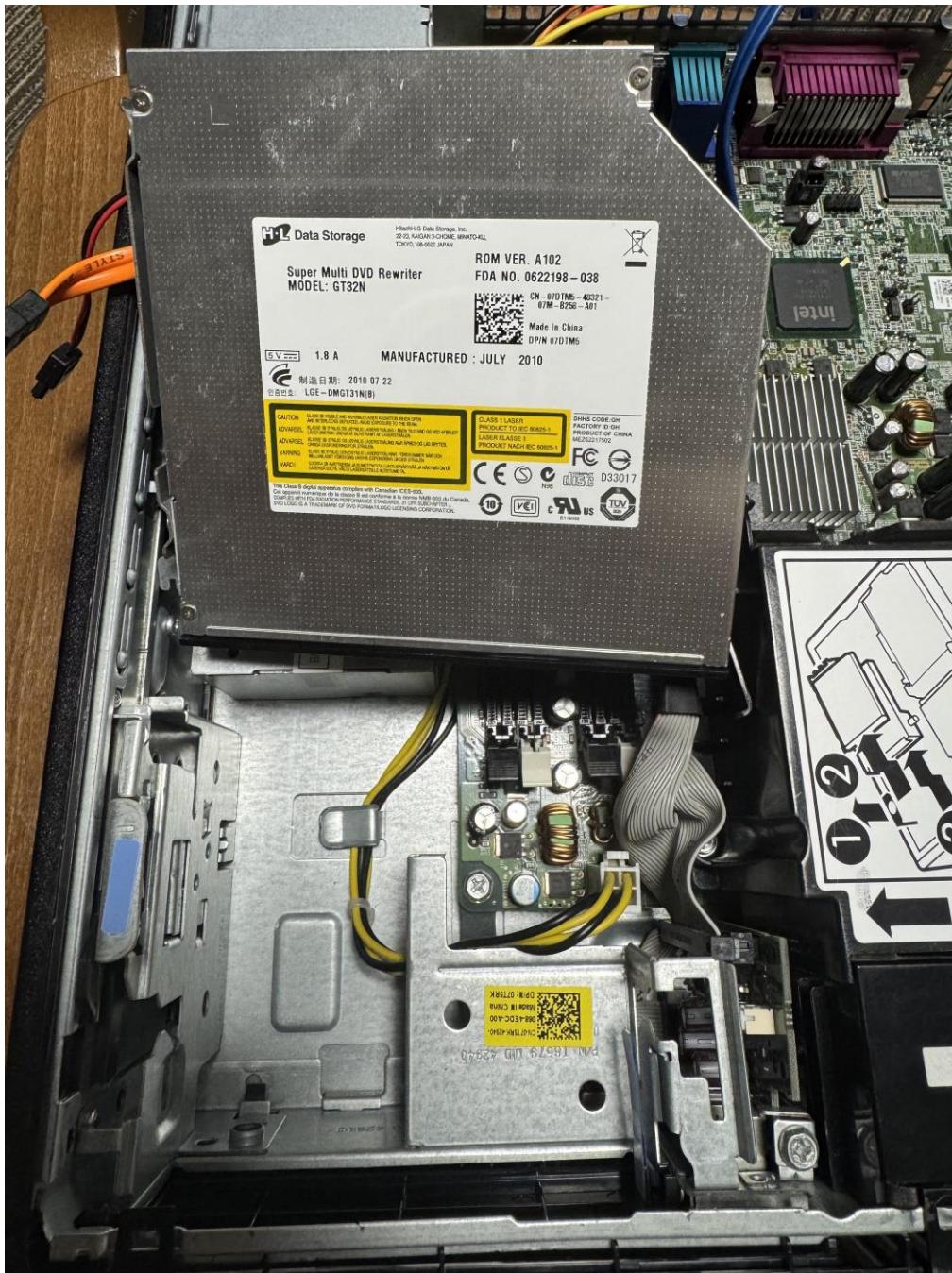
5. Remove the memory DIMMs.



- a. What is the manufacturer of the DIMMs? (2 points) **The manufacturer of the DIMMs is Kingston.**
- b. How many GBs are each DIMM? (2 points) **The DIMMs consists of 2GB each.**



6. Remove the optical drive from the case. Don't forget to unplug the SATA cable and power connection.



- a. What is the manufacture of the optical drive? (2 points) **Hitachi-LG Data Storage, Inc.**

age
Hitachi-LG Data Storage, Inc.
22-23, KAIGAN 3-CHOME, MINATO-KU,
TOKYO, 108-0022 JAPAN

DVD Rewriter
32N

ROM VER
FDA NO.



MANUFACTURED : JULY 2

2010 07 22

T31N(B)

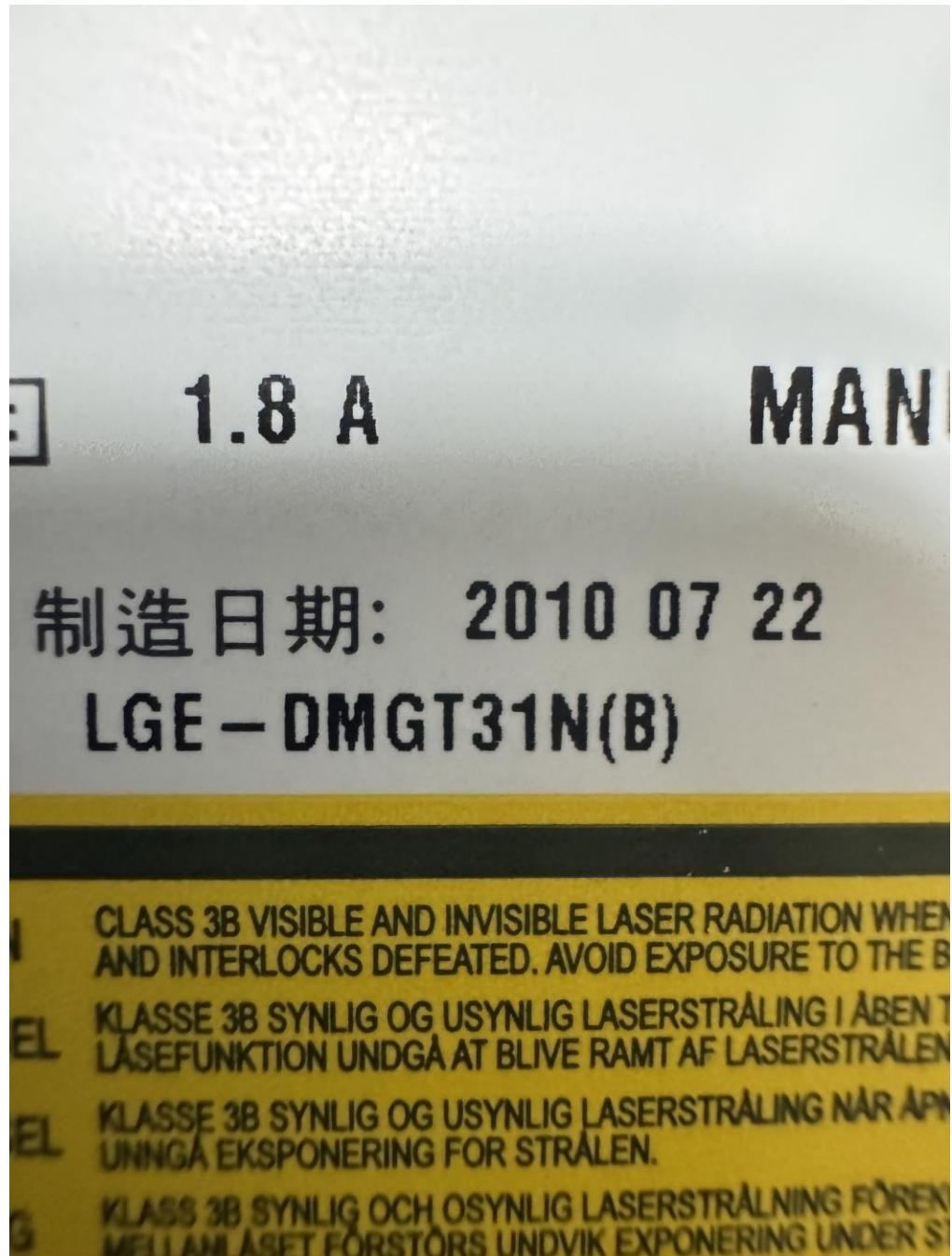
D INVISIBLE LASER RADIATION WHEN OPEN
PÅLAGT. AVOID EXPOSURE TO THE BEAM.
ADVARSEL! INGEN LASERSTRÅLER VED ÅBNING OG VED AFBRUDT

CLASS 1 LASER
PRODUCT TO IE
LASER KLASSE

- b. What type of optical drive is this (i.e., CD-ROM)? (2 points) **This is a DVD-RW optical drive.**



- c. When was the optical drive manufactured? (2 points) **It was manufactured on July 22nd, 2010.**



- d. Why is it unusual that this type of optical drive was installed in a PC? (2 points) Older PC that has a DVD-RW would be entirely appropriate and expected two decades ago, it's not unusual at all. In fact, when older PC was built, optical drives such as a DVD-RW were standard components. In modern days now, having a DVD-RW built into a newer PC is somewhat unusual because of the age that optical drives carry with them. Many people today who will use a DVD-RW drive might want to read old media or burning backup discs. In conclusion, older PC having DVD-RW drives is totally normal, but having them in newer PCs today is abnormal because of the aging of optical drives in general.

Credit to (Ideas):

<https://www.pcworld.com/article/2146860/why-an-optical-drive-can-still-be-useful.html>

7. Provide images of all the components removed from the PC. (2 points)



8. Provide an image of the PC without the components. (2 points)



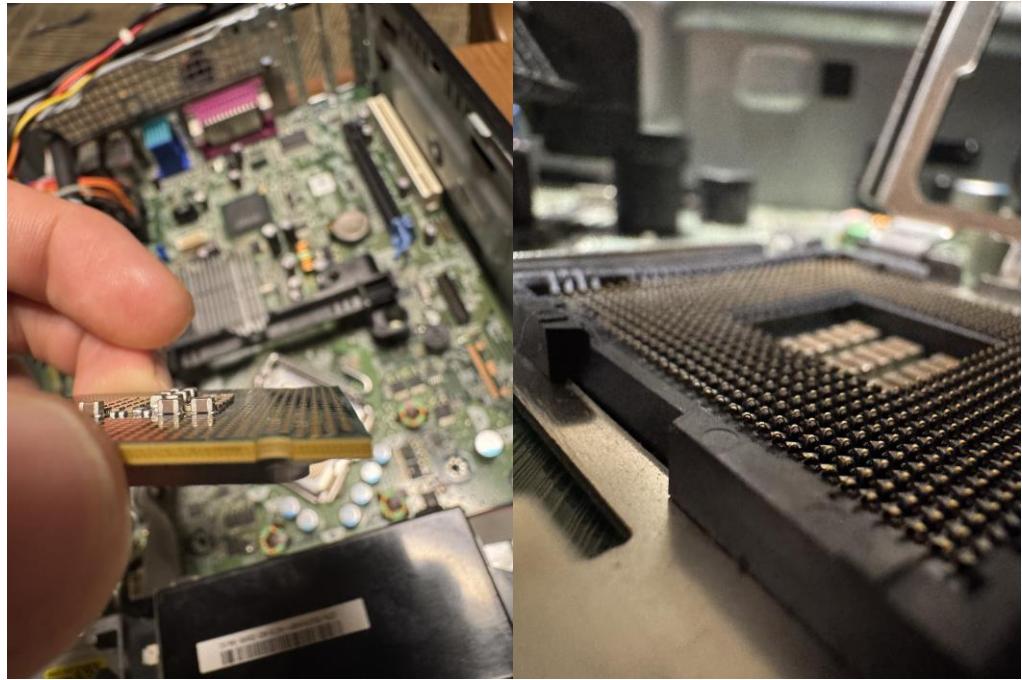
9. Provide an image of the motherboard showing the Dell logo. (2 points)



10. BONUS: Using a Philips screwdriver remove the heatsink covering the CPU and remove (wipe) the thermal paste from the CPU using a tissue or paper towel.
- What is manufacturer of the CPU? (2 points) **The manufacturer of the CPU is Intel.**
 - What is the model of the CPU? (2 points) **The model of the CPU is Intel Core 2 Quad.**
 - What is the speed of the CPU in GHz? (2 points) **The speed of the CPU is 3.00GHz.**
 - Remove the CPU from the motherboard.



- i. Does it have pins? (2 points) **No, this CPU does not have pins on itself.**
- ii. Is this an LGA or PGA CPU? (2 points) **This CPU is an LGA, the motherboard will provide a pin socket for the CPU to slide in.**



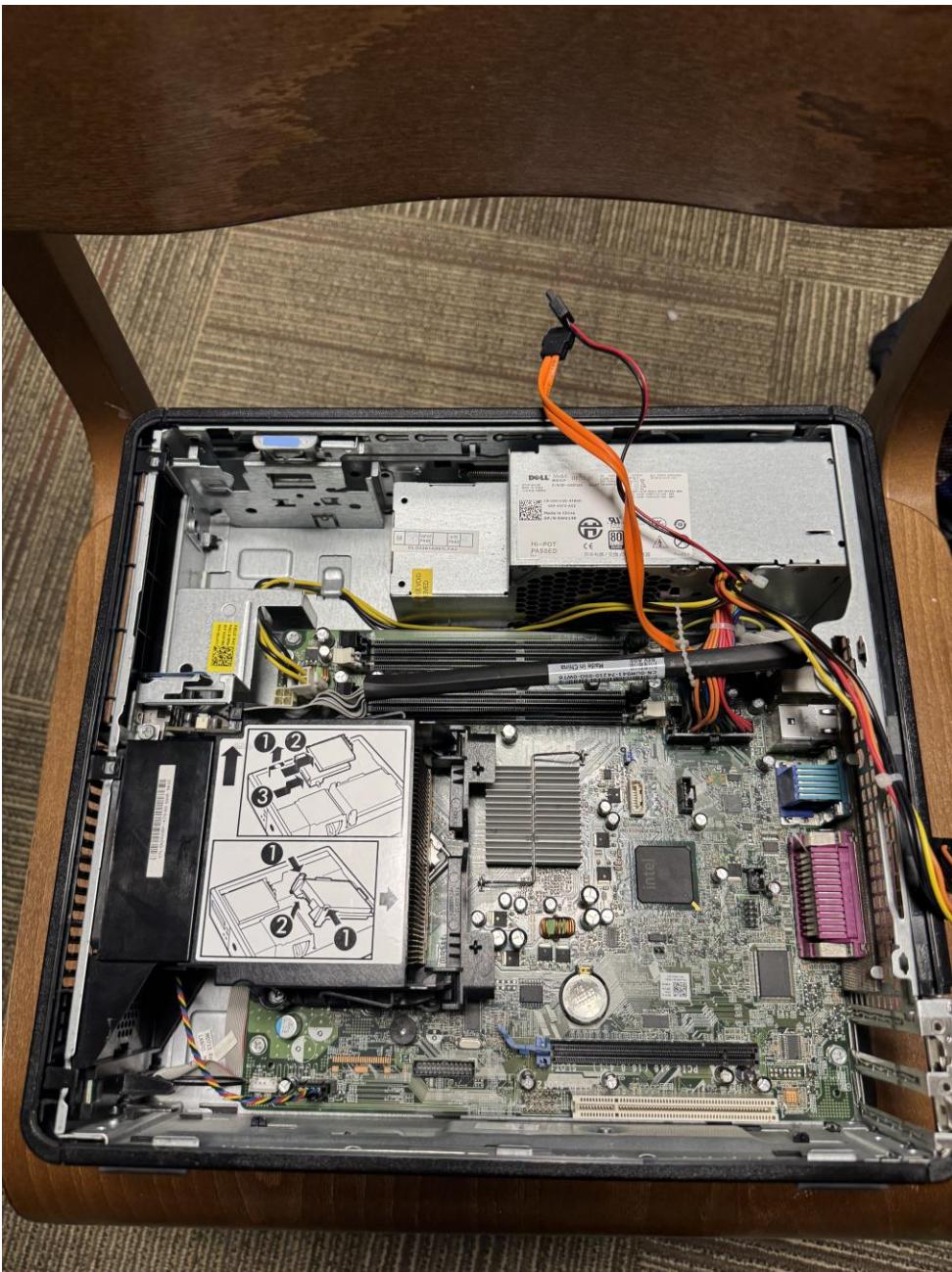
Re-Install PC Components (30 points)

Carefully re-install the PC components previously removed and provide images within this document to show your progress and final result. Be sure that the PC is unplugged and if you do not have an anti-static wrist band be sure to ground yourself by touching the metal case / chassis.

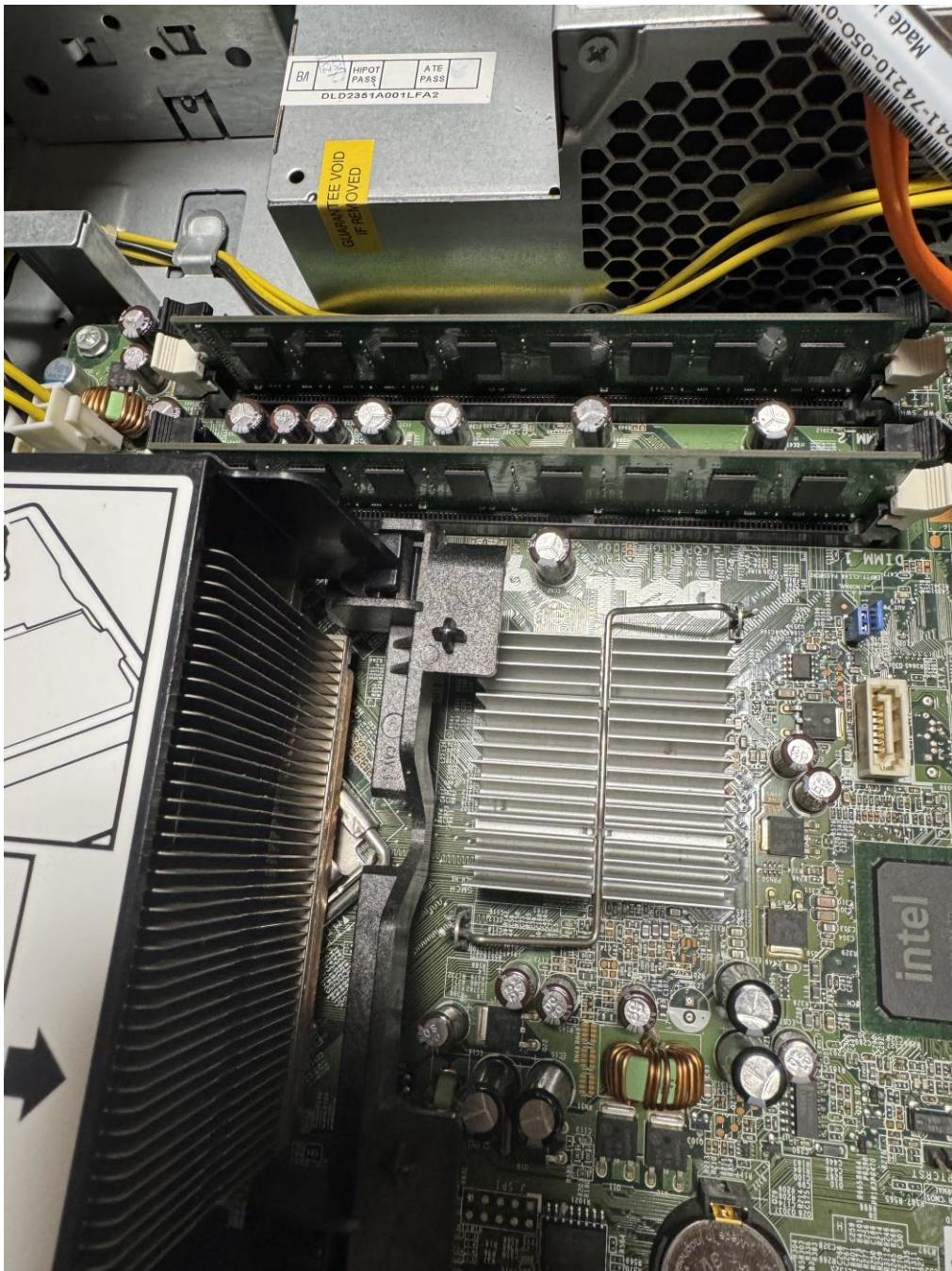
1. Installed CPU on the CPU socket.



2. Installed heatsink and fan on top of the CPU.



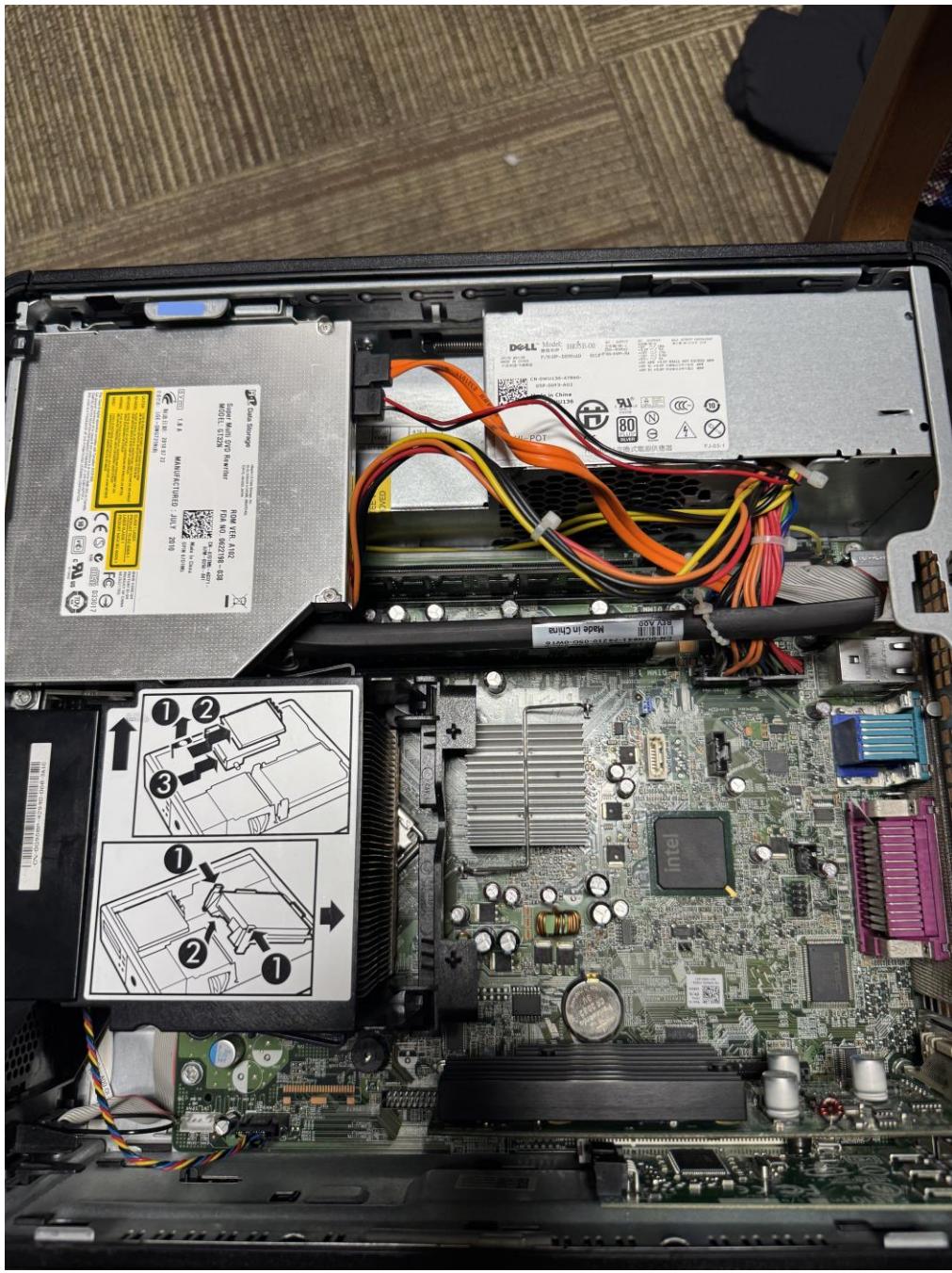
3. Installed two DIMMs on the memory slots.



4. Installed optical drive and connected with cables.



5. Installed Nvidia video card and IEEE1394 FireWire controller card.



6. Installed hard drive and connected with cables.



7. Close the PC cover.

