

CST 8214 Lab #1

Lab Section number: _____

Your name: _____

Lab partner's name: _____

System Number (located on the front of the case): _____

Lab instructor signature (when complete): _____

Objectives:

To identify the different hardware components that make up a computer system

Equipment:

- Toolkit: screwdriver, anti-static wrist strap, small parts tray
- Computer case – provided for you by your lab instructor

Procedure:

N.B.: Follow these procedures carefully. If at any time you are unsure or are having problems, consult your lab instructor to insure that you are not inadvertently damaging the equipment. Don't be afraid or embarrassed to have the lab instructor check your work before going on to another step.

Remember: Feel free to ask questions. Your lab instructor is available to help, if you're unsure of any portion of the lab.

- Your Instructor will assign you a partner for this lab. This lab requires each group to consist of 2 members.
- Verify that you have all the equipment you require. Your instructor will indicate where to get your computer – one computer per work team. This system will be assigned to your team for the semester, therefore you want to make sure you treat it with respect and it will allow you to work properly for the entire semester.
- Do not plug in any peripheral devices as of yet. This particular lab is geared towards identifying the internal components in the computer, and does not immediately require you to connect anything to the computer.

The information you will be gathering in this lab will enable you to continue on with other labs where we will be installing software and drivers for the different components. It is therefore very important that you take note of every possibly useful detail about each of the component you encounter in this lab in your lab manual or binder.

Start by ensuring that you are grounded with the anti-static wrist strap. Your instructor will demonstrate the way to use this piece of equipment at the beginning of the lab. He should also discuss the procedures and rules for using the lab.

Now, examine the front of the computer case. Although the case may have some identifying marks hinting at what is in the computer, we cannot, at this point, trust that this information is accurate.

If you look carefully, there are a few things that can be identified from the front of the case, simply because they need to be visible to be accessed and used. Most of these can be readily identified by the look of the access panel and/or the information visible on it.

Identify the type of case your system uses; **circle** one: MiniTower FullTower Desktop

Identify and circle all removable media your system uses:

- 5.25" floppy disk drive
- Internal CD/DVD-ROM/R
- Removable Hard Disk Tray
- 3.5" floppy disk drive
- PC Card drive (PCMCIA)
- Internal Zip/Jazz Drive
- External CD-ROM
- External Modem
- External Zip/Jazz Drive
- Other Units (see rear): _____

Now, turn the case around and take a careful look at what is visible on its backside. You may see a label on the back of the computer indicating the computer manufacturer and the date when the computer was manufactured. **Enter** this information, if visible:

Manufacturer _____ Date of Manufacture _____

On the backside you should be able to see several different connectors, ports and power connectors. There might be some misleading information, and some of the ports may not actually be in use; you will be verifying the accuracy of this list later on.

Draw a diagram of the back of your system using the outline below, and identify the following connectors on your system:

- a. DB-9 Serial Port
- b. DB-25 Parallel Port
- c. PS/2 keyboard connector
- d. PS/2 mouse connector
- e. USB Slots
- f. VGA monitor connector
- g. Power connector

System Back Panel Diagram

Next, using your screwdriver, carefully remove the case. To do this, you will need to locate the screws on the case and remove them. Make sure that you using the proper bit for the job, so you don't strip the screws.

Remove the cover CAREFULLY. There are several different types and manufacturers of cases, each of which may be slightly different than the other. As a general rule, if the case does not seem to want to readily come off using an upward lifting motion, you may need to slide the case forward before you can remove it.

Now that the cover is off, we can more readily see what is actually in the computer. The first job is to verify the information that we gathered before – i.e. make sure that it is really what we thought it was and/or that it is actually in use - and to locate any extra information about the components that may not have been visible before hand.

For the connectors, the easiest way to find out if it is in use is to trace the attached cable back to its source to find out if it is actually connected to something. This is not a guarantee that it *is* in use, but it indicated that it *could* be used.

Next, take a good look at what is *inside* the computer that has not yet been identified. Use the motherboard layout diagram in this lab to help you identify components. You may have to move some of the cables around a bit to see everything, but *be very careful when you do so*. Moving a cable might disconnect something if you are not careful. Also, be very careful not to move or disconnect any of the cards or modules inside the system.

Take a look at the list of potential items you might find inside the computer – items that were not visible before hand - and see if you can locate any of them. **Circle** any that are applicable:

Motherboard	Network Interface card	Floppy Disk Drive Controller
Hard Disk	Floppy Disk drive	Video card
CMOS Battery	BIOS chip	Chipset (North Bridge)
Chipset (South Bridge)	Audio Modem Riser slot	ATX power connector on Motherboard

Determine the following information about your computer system *without removing any components*. **Do not unplug or unscrew or detach anything inside the computer case.**

BIOS Creation Date (from sticker on chip): _____

BIOS Manufacturer: _____

Motherboard Chipset Manufacturer: _____

Power Supply Maker: _____

Power Supply Wattage: _____ Watts

Motherboard Maker: _____ (in large print on the board)

CPU type: _____ (ask your instructor for this)

Number of IDE interfaces: _____

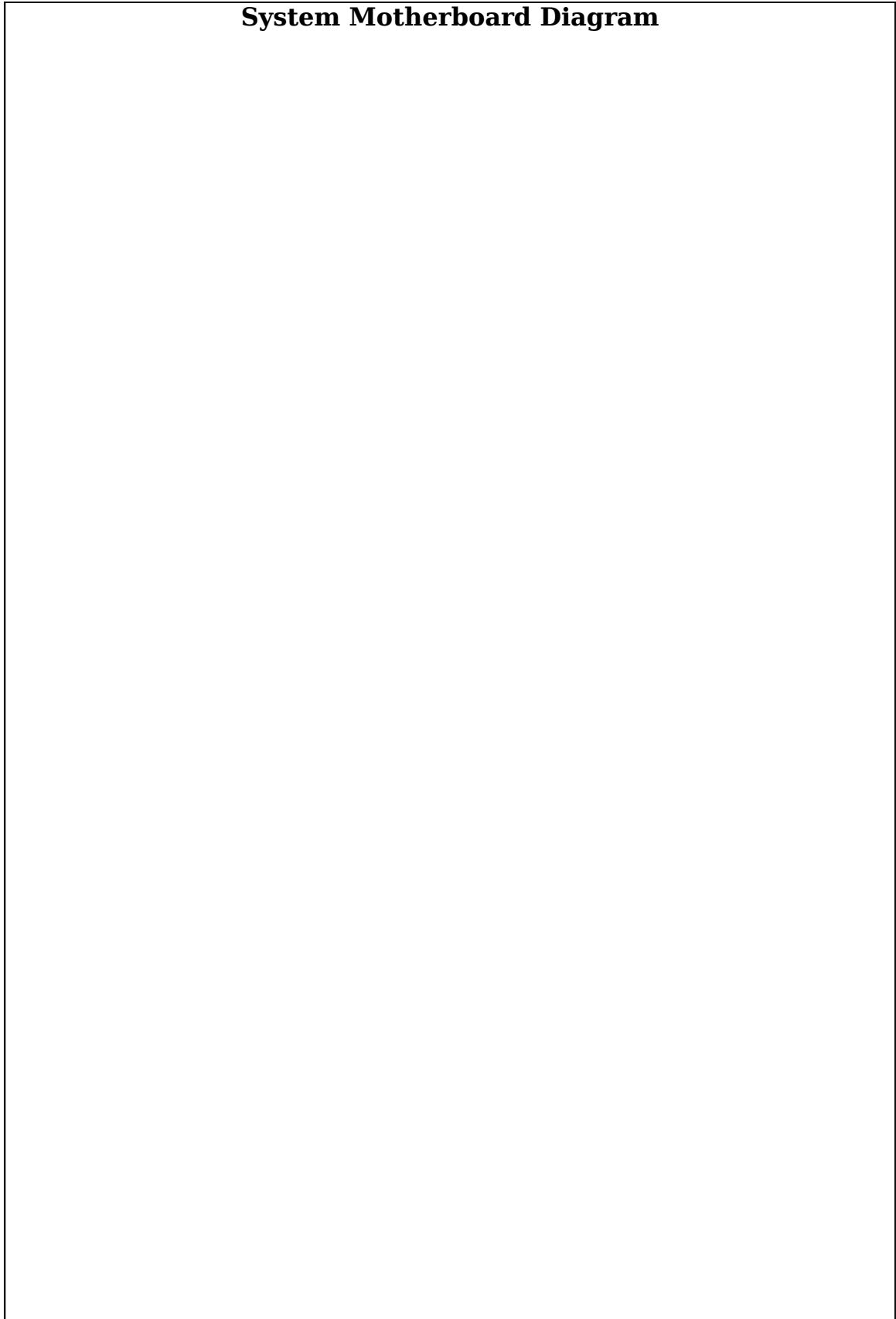
Quantity of System RAM (Mbytes): _____

Motherboard Form Factor: _____

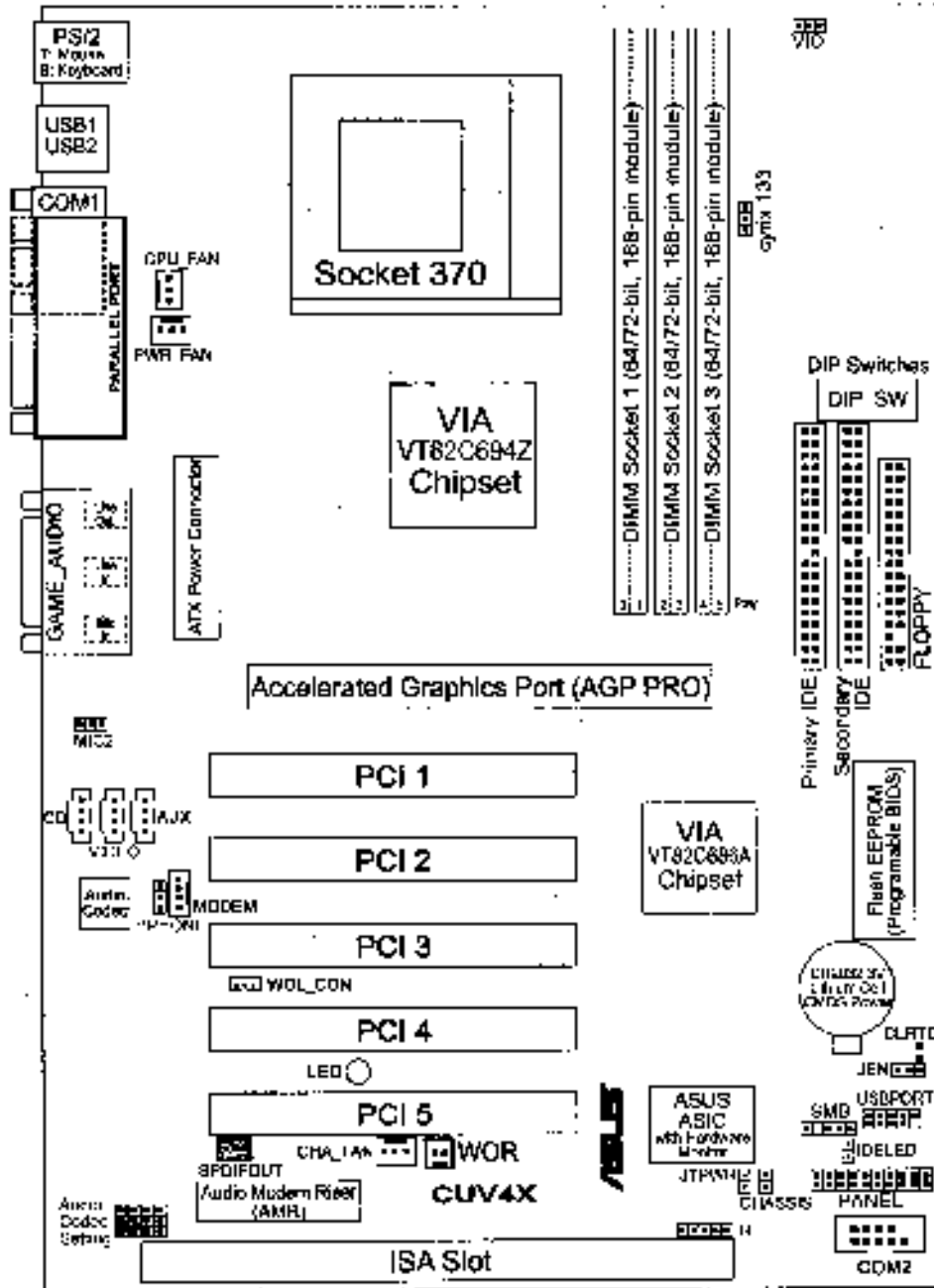
Next, on the next page, **draw** a diagram of the motherboard using the attached layout diagram as a guide and **identify** the location of the following components:

- a. CPU (under heatsink and fan)
- b. Chipset (two places – northbridge and southbridge)
- c. CMOS battery
- d. System RAM sockets (three)
- e. ROM/BIOS chip
- f. HD/IDE (hard disk) connectors (both primary and secondary)
- g. FDD (floppy disk) connector
- h. AGP (graphics card) slot
- i. ISA card slot
- j. PCI card slots (five)

System Motherboard Diagram



ASUS CUV4X Motherboard Layout





Lab Rules, School of Advanced Technology, T Building:

1. Students, at a minimum, must have a Phillips #2 screw driver, utilities disk, and anti-static wrist strap with them at all times in the lab. The lab teacher may, at any time, deny access to the lab to a student who does not have the required equipment.
2. No food or drinks of any kind is allowed in the lab at any time.
3. Broken, defective or suspect parts are to be presented to the lab teacher and/or CSEP teaching assistant for tagging and replacement. Parts are not to be distributed freely. Do not attempt to replace any parts yourself without approval from the lab teacher.
4. Computer monitors must remain on upper workbenches in their current respective locations. If you encounter a defective monitor, contact your instructor and arrange to have it replaced.
5. Each workstation has an assigned keyboard, mouse, power cord and monitor. These must remain at their arranged station. If you encounter a defective part, contact your teacher and arrange to replace it.
6. Keep your workstations tidy at all times. Pickup any parts and screws, organize your workbench, mouse, keyboard and power cords before you leave. Put chairs seats under the table.
7. Turn off all monitors and computers before leaving the lab.
8. Keep conversations with other people in the lab to a normal tone and level. Proper language and behaviour is expected from students at all times. Do not use coarse language.
9. Radios, walkmans, cell phones and pagers are not to be used in the lab at any time.
10. If you do not observe these lab rules, the instructor may deny lab access privileges.
11. Once you have completed your lab and cleaned your work area you are asked to leave the lab class.

I have read and understand these lab rules and agree to abide by them for the duration of my usage of the T110 lab room.

Name (please print clearly): _____

Signature: _____

Student #: _____