<u>**Student Users Guide for the Computer & Extension Studios**</u>

NOTE: All PCs are wiped clean every evening. Save your work to a floppy or to your RCS account. Do not leave your programs on the hard drives. If you do, your work will be lost.

<u>**General Information**</u>

Do not press the button next to the floppy drive, it is NOT a reset switch.

There are 18 Sun Ultra 10 Workstations with 512Mb RAM available in the Computer Studio (cad-01 thru cad-18) and 8 Sun Ultra 10 Workstations with 512Mb RAM available in the Extension Studio (cad-21 thru cad-28). Each workstation is equipped with a SunPCI Coprocessor card for PC-based applications. This card has a 400Mhz AMD K6-2 cpu with 128Mb RAM. The printer, **CS-LP1**, is in the Computer Studio, 6309JEC. The printer, **CS-LP2**, is located in the Extension Studio, 6314JEC.

Toolboxes, logic analyzers, evaluation boards, protoboards, wire, and parts cabinets are available in each studio.

<u>**Logging on**</u>

VLSI Design students will logon using their ECSE user names and passwords. All other course users will use pcguest (lower case) as the user name and pcguest (lower case) as the password. PC users will see the standard pc boot screens as Windows98 boots up. When you see the standard Windows logon, enter your RCS user name and password, click ok, and Windows will finish booting up.

You will see 2 icons on the desktop called **Mount SAMBA** and **Release SAMBA**. These icons mount and un-mount your RCS home directory for saving and retrieving your data files. To mount you home directory, double click the Mount SAMBA icon. You will see the message:

Type the password for the shared resource: _

This is your RCS password. Your home directory will then be mounted. Open the My Computer icon. Your home directory will be displayed as **Homes on 'Sambasrv.rpi.edu'**.

When you are finished with your studio session, double click on **Release SAMBA**. This un-mounts your home directory. If you forget to do this before you leave, your home directory remains accessible to any and all individuals who use that particular PC.

Once in a while there are network problems preventing you from logging on to your RCS account. You can also save and retrieve the old fashioned way using the floppy disk drive.

Logging off

For PC users there is a 2 step log off procedure. The first step is to log out of Windows by selecting **START** and **Shut down**. When the SunPCi PC window goes blank, select **File** and **Exit**. This blanks the entire screen. Right click and select **Quit**. The main Sun Logon screen will appear and the workstation is ready for the next user.

Applications

Course applications can be run from the **Start menu** or from the desktop **Applications** folder. Double click on the desired application shortcuts.

Printing

As mentioned earlier, there is a printer in each studio; **CS-LP1** for the Computer Studio and **CS-LP2** for the Extension Studio. Since the user can select either printer, it is important for you to setup your print job for the right printer. To do this, select **Page Setup**. Next select **Printer**. See which printer is selected. If the correct one is selected, click **OK**. Otherwise, select the other one.

Course Specific Information

Digital Electronics

Double click on the **Workshop** icon to start your B2SPICE program.

COCO

Protoboards & Module Packets

Protoboards and matching Module Packets will be assigned to students in groups of 2. The schematics of these modules are located in C:\Cstudio\LogicWorks 4.0\Program and are called **LED.CCT**, **Display.CCT**, **Switch.CCT**, and **Timer.CCT**. They are also located in the **LogicWorks 4.0** directory on the ECSE server **www.ecse.rpi.edu/Courses/CStudio**. All necessary data sheets and manuals are also available, in pdf format, in the Cstudio directory.

68HC11 Simulator

To run the 68hc11 simulator, double-click on the **Sim11** icon. A DOS window opens up to the Sim11 directory. This is the default working directory. Make sure your programs are located here. The **Asm.bat** file will assemble your source code and generate the necessary files to run the simulator.

Downloading to the 68HC11 EVB

To download to the 68HC11 evaluation board, connect one of the DB9 serial cables to the **Terminal Port P2** of the 68HC11. **Sun PC Com1** is the preferred cable for convenience. Double-click on the **Data Terminal** icon. The Procomm Plus Terminal program window opens. Make sure the lower status line indicates **ADM-3a, ASCII, direct-connect-Com1, 9600, N-8-1**. If any of the above is not correct, single click on the wrong item and select the correct setting. Connect the **+5 (RED)** and **GND (GREEN or BLACK)** EVB cables to the power supply and turn on the power.
The terminal display should show the following:

BUFFALO 2.5 (ext) – Bit User Fast Friendly Aid to Logical Operation

Hit the Enter key and you should get the Buffalo prompt **>**. To download a program (**S19**), enter **load t** at the prompt. Notice the space between load and t. This is necessary. Then hit the enter key. The evb is now waiting for the S19 file to be sent from the PC.

>load t

Now go to the top menu bar and select the Data menu and then select Send File. The main Cstudio directory opens. Go to the directory where your S19 file is located and double-click on it. You will see the status of the file being sent. Upon completion, the evb will respond with **done** and the prompt **>** will return. Now you can execute the program on the evb by typing g and the starting address of the program.

*>***g 6000**

<u>**Microprocessor Systems (MPS)**</u>

Protoboards

Protoboards are assigned to students in groups of 2. These protoboards contain dual 60 pin header blocks to connect to J8 and J9 of the 68HC12A4EVB. Each header has a triangle indicating pin 1. Each end of the 60 pin ribbon cable header also has a triangle indicating pin 1. Make sure all triangles point to each other so that pin 1 of the protoboard is the same as pin one of J8 or J9 respectively. Wiring will proceed much smoother.

Downloading to the 68HC12A4 EVB

To download to the 68HC12 evaluation board, connect one of the DB9 serial cables to the **SCI0** port of the 68HC12. **Sun PC Com1** is the preferred cable for convenience. Double-click on the **Data Terminal** icon. The Procomm Plus Terminal program window opens. Make sure the lower status line indicates **ADM-3a, ASCII, direct-connect-Com1, 9600, N-8-1**. If any of the above is not correct, single click on the wrong item and select the correct setting. Connect the **+5 (RED)** and **GND (GREEN or BLACK)** EVB cables to the power supply and turn on the power.

The terminal display should show the following:

D-Bug12 v1.0.4
Copyright 1995 – 1996 Motorola Semiconductor
For Commands type "help"

>

To download a program (**S19**), enter **load** at the prompt. Then hit the enter key. The evb is now waiting for the S19 file to be sent from the PC.

>load

Now go to the top menu bar and select the Data menu and then select Send File. The main Cstudio directory opens. Go to the directory where your S19 file is located and double-click on it. You will see the status of the file being sent. As the file is downloading you will see a series of asterisks under the load command. Upon completion, the evb will return with the prompt >.

>load
******
>

  Now you can execute the program on the evb by typing g and the starting address of the program.

>**g 5000**

C Compilers & Assemblers

C Compilers and Assemblers for the 68HC11, 68HC12 and 68332 are available. Batch files have been made to simplify program generation. Each processor has a specific directory. By double-clicking on the **cc6811**, **cc6812**, or **cc332** icons, you will open a DOS window to the repective directories. The batch files for assembler are **Asm11.bat**, **Asm12.bat**, and **Asm332.bat**. The batch files for the C Compilers are **cc6811.bat**, **cc6812.bat**, and **cc68332.bat**.