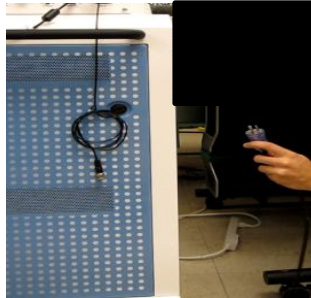


Visualsonics Vevo2100: Manual for Collecting RF Data

Updated: 10/29/2012

M Kurowski

1 : System Start-Up/Shutdown

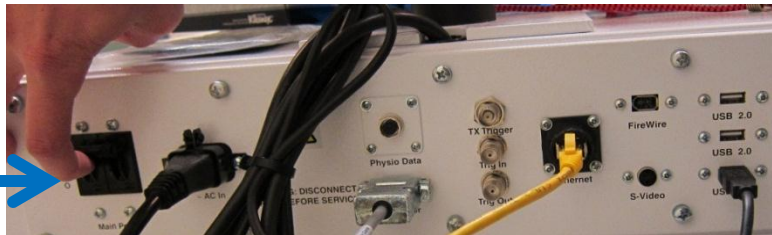


1.1

The Visualsonics mVevo2100 system must be the only device plugged into an outlet; failure to abide by this may damage the machine and void its warranty. Apply the wheel foot brakes before powering on.

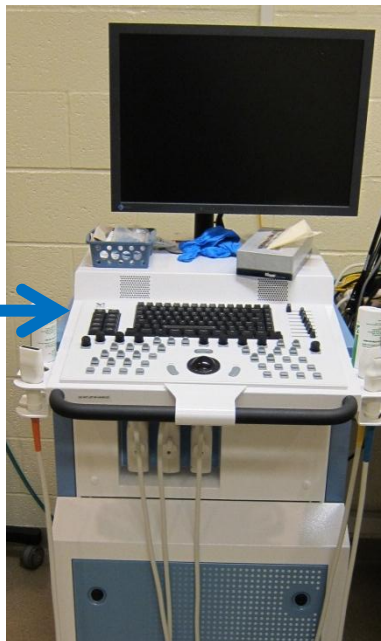
1.2

Main Power Switch



To start-up the Visualsonics Vevo2100 system, flip up the main power switch on the back panel. To start the computer, press the rocker switch on the left side of the system. During start up, the keyboard will light up and the Windows loading screen will appear.

Computer Rocker Switch

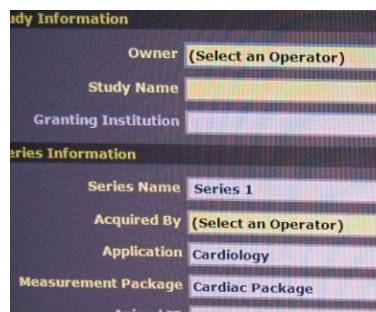
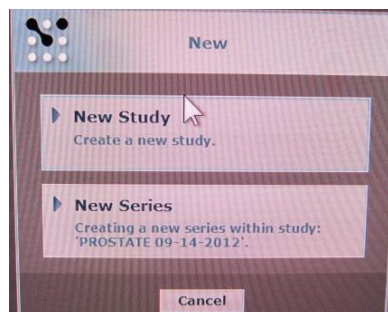
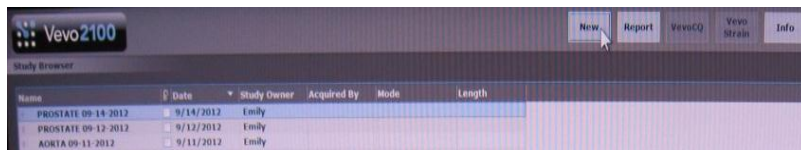


To shutdown the Visualsonics system, **turn off the computer first before** flipping off the power main switch. Press the computer rocker switch while in the Study Management Browser home screen to shutdown the computer. If the system was used for more than 10 minutes, do not immediately turn off the main power switch. Leave the main power switch on so that the cooling fans can run for 10 minutes before flipping off the main switch.

2 : Starting the Application

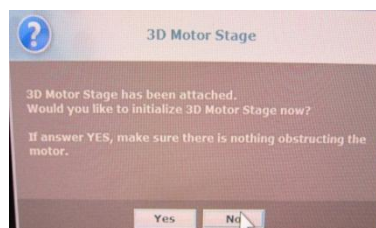
2.1

The software application starts automatically at the **Study Browser/Management** screen. To collect RF data, create a new study by clicking the **New** button. After acquisition all the data will be saved in this study directory. Also data from past studies can be viewed, named, and exported from the browser screen.



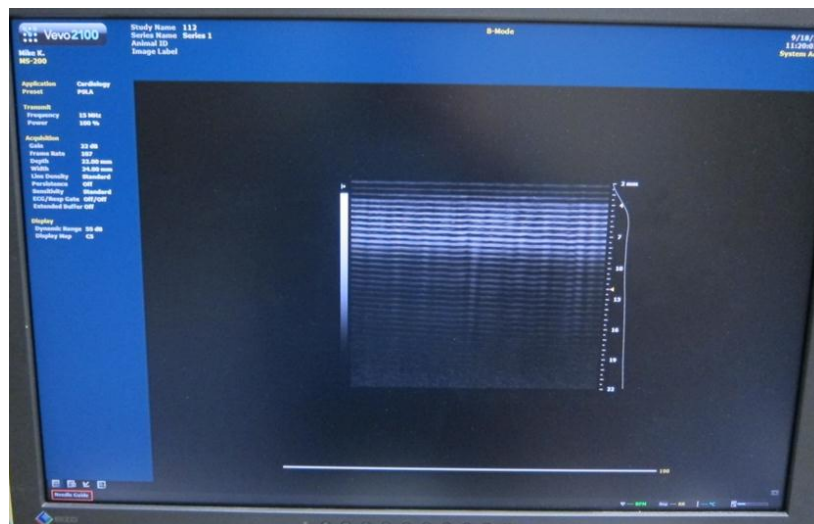
2.2

Fill out the required Study Information in the yellow highlighted fields: Owner, Study Name, & Acquired By.



2.3

When starting a new study or changing probes in the active port, the program will always prompt a message asking for the transducer's imaging application, choose general imaging. If prompted to initialize the 3D Motor stage, click No. The 3D motor stage is a separate device not required for collecting RF data.



The program will then display a real time B-Mode image in the Study screen.

3 : Setting up the Transducer Probe



Transducer Probe Advisory

The transducer probes cannot be submerged in water below the water mark. If the transducer needs to be submerged, use a water protective sleeve, located in cabinets of the Bioeffects Room. Apply ultrasonic coupling gel to the top of the transducer. Put the probe in sleeve & rubber band the sleeve to the probe.

There can be no air bubbles trapped in the gel on the surface of the probe when collecting RF data. Gently smooth away any sleeve wrinkles and bubbles over the probe.



Active Port

3.1

To un-attach/insert a probe from a port use the turn key. When the system is on, simply insert the probe into the active port. The program will recognize the changing of the transducer probe and prompt you to designate its application.

The Visualsonics Vevo2100 uses phased array probes of increasing nominal center frequency: MS200, MS250, MS400, MS550. However, there is only one active port. The Active Port is labeled and it is the port furthest to the right. Any Visualsonics probe can be used in the active port; the probes can be switched into the Active Port at any time (including when the system is off) except during the transfer of data.

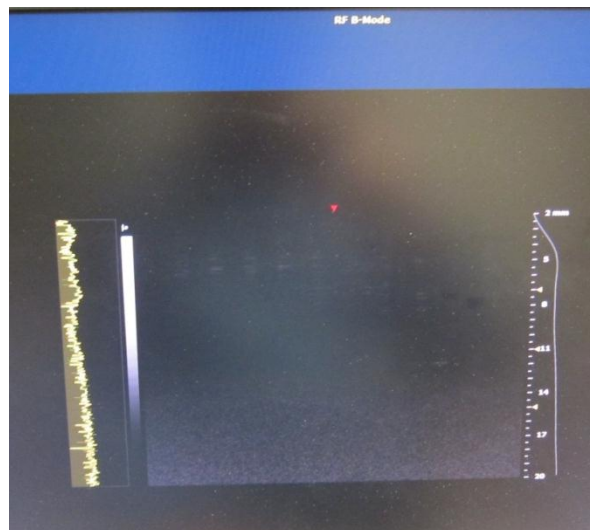
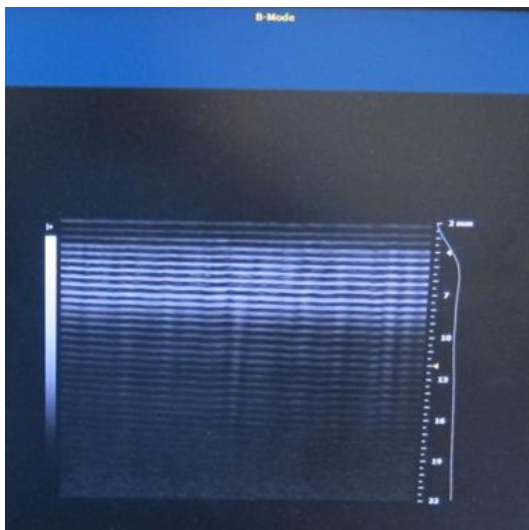
4 : RF Acquisition Mode

4.1

To collect RF data the Visualsonics must be in RF B-Mode. When first starting a study, the default mode is B-Mode. Press the **RF** button located on the keyboard.



The Visualsonics is in RF B-Mode and not B-Mode when the mode title changes on the study screen and a yellow RF vertical envelope bar appears on the left side of the screen near B-Mode image. If these changes do not appear, no RF data will be collected.



5 : Controlling Acquisition Settings (Basic)

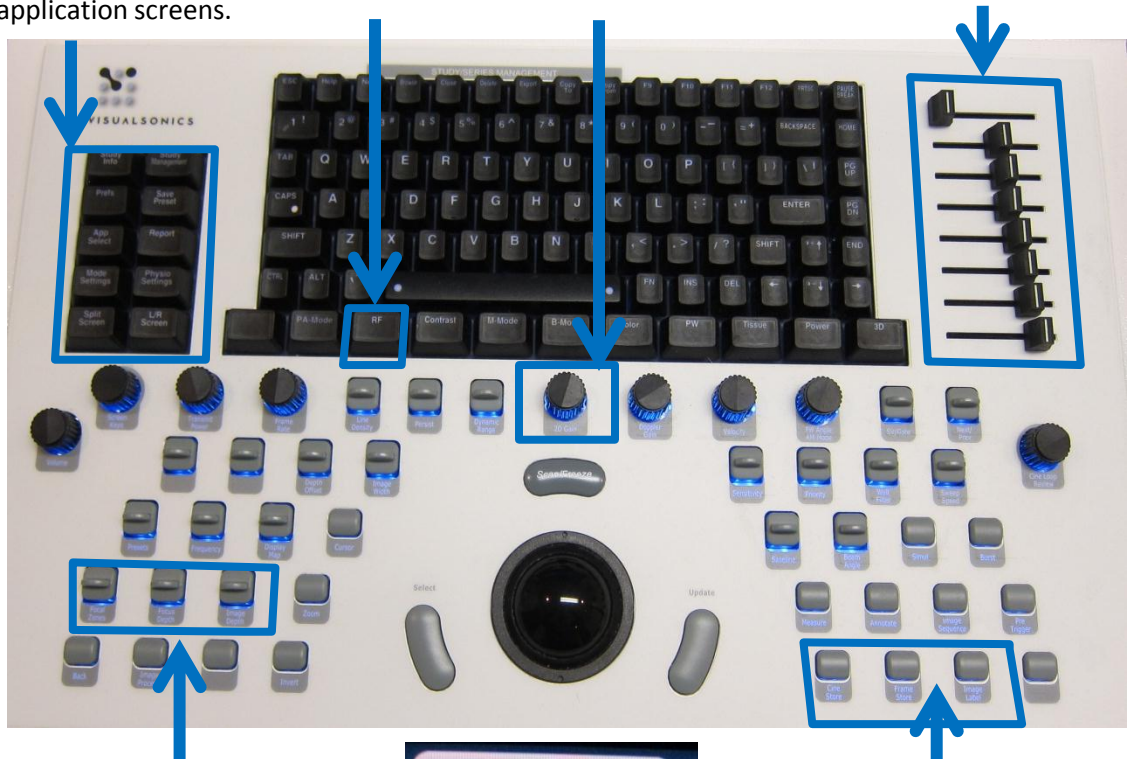
5.1

Use these buttons to switch between the Study, Management Browser, and other application screens.

Press the **RF** button to set the mode to collect RF data.

Use the **2D Gain** knob to adjust the total receive gain.

Use these sliders to adjust TGC, you can disable TGC in Engineering Mode.



Use these button to adjust the # of focal zones, focus depth, and image depth.

Use the **Frame Store** or **Image Label** button to acquire a single frame of RF & B-Mode data using the Frame Store or Image Label button. Press **Cine Store** to collect a time series of RF B-Mode data.

| Vevo2100 | |
|---------------------------|--------------------|
| Mike K. MS-200 | |
| Application Preset | Cardiology PSLA |
| Transmit | |
| Frequency | 15 MHz |
| Power | 100 % |
| Acquisition | |
| Gain | 22 dB |
| Frame Rate | 107 |
| Depth | 22.00 mm |
| Width | 24.00 mm |
| Line Density | Standard |
| Persistence | Off |
| Sensitivity | Standard |
| ECG/Resp Gate | Off/Off |
| Extended Buffer | Off |
| Display | |
| Dynamic Range | 55 dB |
| Display Map | C5 |

5.2

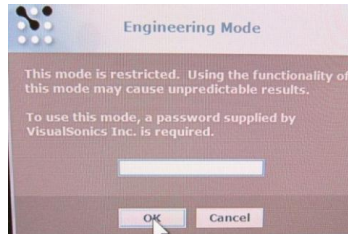
The other keys can be used to control various settings. The key settings in use will be displayed together on the left side of the study screen.

6 : Controlling Acquisition Settings (Basic)

6.1

To enter Engineering Mode, press Ctrl + Shift + E.

At the prompt, enter in the password. Engineering Mode allows access to advanced configuration settings. Engineering Mode can be used to disable the TGC sliders and set a flat gain value.



6.2

To disable TGC, go to the Time Gain Compensation directory by expanding

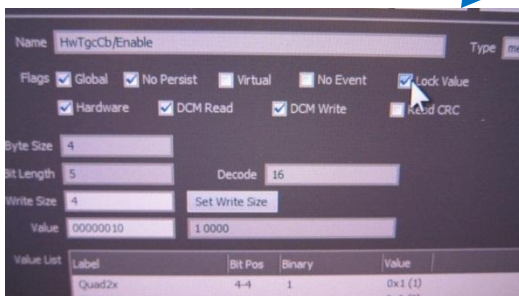
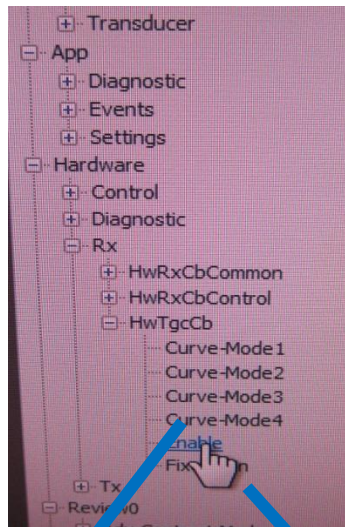
[-] **Hardware**

[-] **Rx**

[-] **HwTgcCb**

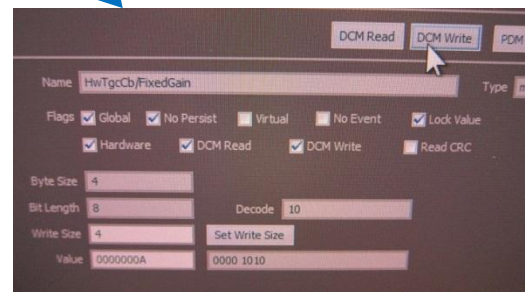


*If the cursor does not appear on the screen, press the **Cursor** button located to the left of the scroll ball.*



6.3

Click **Enable** and change the **Value** field to 000000010. Check the boxes **DCM Write** and **Lock Value**.



6.4

Click **Fixed Gain** and in **Value** field enter a Hexadecimal input. The valid range from low to high is 00000001 to 000000FF. Check the boxes **DCM Write** and **Lock Value**.

7 : Collecting RF data



7.1

To collect the RF data from the B-Mode image, press either the **Frame Store** or **Image Label** button. Use Image Label to save RF data and immediately name the data. Use Frame Store to acquire RF data without being prompted to name the file. The images can be named at a later time in the Study Management Browser.

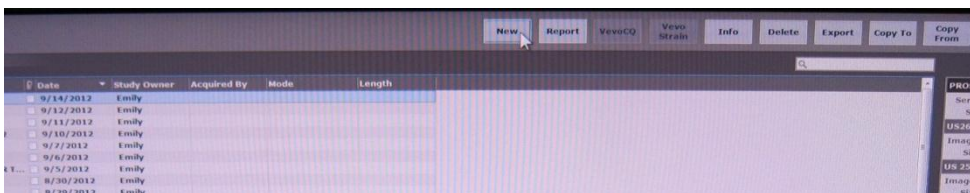
7.2

After acquiring the RF data, the collected data will be listed in order by the time of acquisition under the study name in the Study Management Browser. Press the **Study Management** button to switch to the Browser screen and view the acquired data.



7.3

Any of the ports on the back of the Visualsonics can be used to transfer the collected data to a storage device. The most common method is to use either USB port. If connected to an Ethernet port, data can also be sent to the Z:/ Drive, a secure location on the Beckman network.



7.4

Select the individual files or the entire Study intended for transfer, then click on **Export** or **Copy To**. Find the storage device that is connected and create a folder to hold the data. In the field **Save As**, a prefix can be added to the acquired data. Select the saved data format as **.iq** data and click OK to complete the transfer.