

## USB CONNECTIONS

Please go to: <http://www.concept2.com/venuerace>.

This site will have links to the latest Venue Race software version and more extensive support and documentation. The venue racing software supports both PM3, PM4 and PM5. For connecting all PM4s and PM5s using an RS 485 wired connection, please refer to the Venue Race Guide Wired.doc.

Contact Information: For support during business hours, please call Concept2 at 800.245.5676 or email: [rowing@concept2.com](mailto:rowing@concept2.com).

### Introduction

This document will guide you through the process of setting up an indoor rowing race with USB connections using Concept2 Performance Monitors and the Venue Racing Application (VRA).

**Concept2 STRONGLY recommends that all equipment be inspected and setup during business hours so Concept2 can support you effectively! We also strongly urge you to get familiar with these instructions and the Venue Racing Application (VRA) before race day. Connect a couple of PM's to the race computer and run through these instructions step by step while using the VRA.**

### PC System Requirements

- 1Ghz or higher Pentium class processor
- USB 2.0 port; refer to the USB Notes section for more information
- Venue Racing Software (recently downloaded)
- High-quality graphics are recommended
- 2GB of hard disk space is recommended on C drive.

### USB Notes:

- Concept2 has had trouble with some models of Compaq and Toshiba laptops; these laptops do not seem to support USB well. If problems occur during setup, please try another brand of laptop.

### Main Steps of Setting up a Race

1. Install the VRA on your laptop/PC.
2. Check the firmware version of rower monitors and update them if necessary.
3. Connect the USB hubs to PC with USB 2.0 cables.
4. Connect the monitors to USB hubs with USB cables.
5. Discover the monitors.
6. Enumerate the monitors.
7. Verify and test the setup.
8. Create (or load) a race.
9. Start the race.
10. Finish the race and create a results file.
11. Load the next race.

## Installing the Venue Race Application (VRA)

1. Please ensure that your PC meets minimum system requirements.
2. Download the latest version of the Venue Race Application from: <http://www.concept2.com/venuerace>.
3. Before racing, make sure that all PC power management features such as screen savers or automatic hibernate mode are turned off. Problems can occur if the screen saver kicks in during a race.

## Step-by-Step: Running the Venue Race Application (VRA)

**Note:** Set screen resolution on the computer BEFORE running the VRA. The higher the resolution of the screen, the more “boats” will appear. If you are using a projector and having trouble getting the number of boats you need, try using “Extended Desktop” mode.

1. Launch the VRA from the Start | Programs menu or by clicking the appropriate icon on the desktop. The VRA launches a setup wizard to guide you through the process of discovering and enumerating the ergs and setting up the first race. An option is presented for advanced users to bypass the Wizard.
2. Click Next to continue the wizard.
3. Select the connection method (USB) and click Next. You will need to have at least two PMs connected to continue through the Setup Wizard. If there are no PMs connected, you will need to cancel out of the Wizard. You will still be able to set up races by choosing the New button from the PM3 Indoor Racing Control Panel and following the prompts.
4. The wizard will display “Discovering Ergs...Please Wait.” Depending on the number of ergs in the field, this should take less than 15 seconds.
5. Once the VRA has discovered as many ergs as it can, it will notify the operator and allow an option to either continue by selecting Next or request assistance by selecting Help. If the application discovers the correct number of ergs, then select Next. Otherwise select Help for troubleshooting information.
6. The wizard then provides the ability to assign a physical address equivalent to a lane number to each erg. These numbers will correspond to the lane numbers derived from the race files. By selecting Number all Ergs, the application initializes all ergs to allow the assignment of a unique address to each erg. Starting with the erg that occupies lane #1, request a lane number by pressing the proper key on the erg and then either confirm or reject the offered lane number depending on whether it is correct. Continue this process until all ergs are properly numbered. Note: The wizard text updates each time an address is assigned, providing a summary of all currently assigned addresses.
7. Once all the ergs are properly numbered, select Done Numbering and then click Next. Note: You must select Done Numbering before selecting Next to continue the wizard.
8. The next step in the wizard allows you to define a new race by entering the parameters for the race and a race name. Use a name that will be meaningful later on, such as Heat 1 or ML30 (men, lightweight, 30 age group). Selecting Cancel at this point will cause the application to rediscover and restore the assigned physical addresses.
9. The VRA stores the race configuration in the Windows registry after successfully discovering and numbering the ergs. When the application is run the next time, the discovery process will compare the current race configuration to the last known race configuration. If nothing has changed, all ergs are automatically numbered and racing can begin without step 6 above. Canceling the wizard at any point will result in restoring the previous configuration automatically as well. The restore operation occurs regardless of whether the PM3s have remained on or have been turned off and restarted.
10. If the application detects one or more changes to the race configuration, only those ergs that were in the previous configuration will be restored. The application will allow the operator the opportunity to assign addresses to the newly introduced ergs without affecting the existing ergs.

## Updating the Firmware on the PM3 or PM4

- Check the Firmware Version on each monitor. To do this from MAIN MENU, go to More Options > Utilities > Product ID
- The latest version of firmware can be obtained from our web site. [concept2.com/firmware](http://concept2.com/firmware)

## USB Connection Troubleshooting

- Start with computer started but not venue race. Then plug in all hubs and monitors. **Wait several minutes!** Only then start venue race software.
- Ensure that the PMs have been updated to the latest firmware revision.
- Ensure that there are no more than two USB hubs between the PM3s and the computer.
- Ensure that the hubs that are connected together (that is, daisy-chained) are plugged into port 1, 3, or 5 of the previous hub.
- When using USB extension cables, they count as a hub.
- Use only USB 2.0 “Active” extensions.
- Ensure that power is being provided from a wall source (110-220v) to the hubs.
- Ensure that no single cable between hubs, computers, or PM3s is over 15’ (5m) long. USB cannot support longer cables between active components contained within each of these devices.
- Occasionally, PM3s are not properly recognized by Windows. If this happens, try unplugging it, wait 10 seconds minimum and plug it back in. The USB Chipset in the computer can be a problem. So far, Intel chipsets are generally successful; however, NEC chipsets and “Standard OHCI” can be problematic.

## General Operation Notes

### Night Before Setup Notes

Most race organizers will set up the night before and make sure everything is working. If this is the case, there are some special notes for you:

1. Once you are done for the night and want to shut everything down, exit out of the VRA.
2. When you exit, the VRA will display the following prompt: Do you wish to put the PM3s in Normal Mode? Answer yes. The VRA will display the Main Menu on all the PM3s.
3. Shutdown the computer and/or disconnect the USB cable. After about 4 minutes, the PM3s will all turn off to save battery power. If you do not follow this procedure, the PM3s may stay on all night.
4. Disconnect power to the USB Hubs.

### Morning Of (After a Night-Before Setup) for USB races

1. When you come in the next morning, disconnect the USB cable from the computer before turning on the computer. Some PC’s will have trouble booting up when many USB devices are attached.
2. Boot up the computer and login. Do NOT run the VRA yet.
3. Apply power to the USB hubs.
4. Plug the cable from ONE of the USB hubs into the computer. Wait for several minutes. You can verify that the Hub/PC has properly enumerated all PM3s by checking Device Manager on the PC and the LED’s on the USB Hub.
5. (If applicable) plug in the cable from another USB hub. Wait several minutes, repeat as needed.

6. Wait another minute. This is to allow Windows to recognize all of the USB devices properly. Windows can be very slow at this.
7. Run the PM3 Venue Race Application.
8. As the wizard is running, please be VERY sure that it tells you that you have the expected number of ergs. If not, use the Help button, and click Discover again. If this is not working, refer to the USB Connection Troubleshooting section.
9. Please check carefully on the PM3s that the numbering is correct. If not, use the wizard to correct.
10. Run a short test race to ensure that all boats move when the race is started and that everything works as expected at the end of the race.

## Cable Disconnect - Keep Rowing

During the course of the race, you may encounter a hardware fault such as a cable disconnection. The Venue Race system has been designed such that if a connection is broken during a race, the PM should continue to keep score for that individual user. After about 10 seconds of no data from the PC, the PM will display “KEEP ROWING” at the bottom of the screen. All race participants should keep rowing. Scores will be kept in the PM at the end of the race and must be recorded manually. The PC screen will show the boat with the lost connection as white with a border and will stop moving forward. It will eventually scroll off the left side of the window.

**Operation of the Indoor Racing Control Panel**—This section provides brief explanations of the options located on the PM3 Indoor Racing Control Panel.

**New**—Allows you to create a new race by selecting type, distance etc. and entering participant names for immediate use or saving for later use.

**Open**—Allows you to open an existing race file for use or editing.

**Modify**—Allows you to edit the race file currently open.

**Prepare to Race**—When the race has been created and loaded properly, and the PM3s are in the “OK to Warm Up” state, this button starts the race start sequence. The terminology of this button will change as the start sequence progresses. During a race, it serves as the stop button to end a race if this hasn’t happened automatically.

**Race Display Scale**—Provides various options for viewing the race (100M at a time, 200M at a time, 500M at a time, 1000M at a time, and Auto). Auto will change the scale automatically to keep all boats on the screen as long as possible.

**Setup**—Allows you to define your connection method, discover the ergs, and enumerate the ergs. Usually you will use the setup wizard to define this information.

## Options

Contains two tabs: Preferences and Race View Options

**Preferences**—The Preferences tab contains three types of information:

- Paths. Default directory location the VRA will use to store the Race Files, the Race Results Files, and the Split and Stroke data on the PC. Do not set these paths to a network drive.
- Start type to be used for the race. Concept2 recommends Modified Random as the start type.
- Format to use for reports.
- Network: This is for future use, please leave this box unchecked.

## Race View Options

Race View Options tab allows you to choose what’s seen during a race.

- Right Column. Select what is shown on the right edge of race display.

- Sort. Selecting this will have the VRA sort all boats at the chosen increment. Each sort will bring the lead boat to lane one, second place to lane two, etc. This is used when there are more boats entered than what can be displayed on the PC screen.
- Always display rower names is recommended if Sort is on and rower names have been entered for each lane. Nice for crowd information.
- AutoScale is Default. When checked, Auto is the default scale used.

## Race Files and Race Management Tools

For larger races, race organizers typically prepare .RAC files with competitor's names in advance, and have a system for analyzing results. Some race organizers have created their own programs to make files, others use the VRA to create the files, and still others use ErGo.

If you are creating your own race files, please note some general guidelines:

- Race names should not exceed 16 characters.
- Race participant names do not have a programmatic limit, but only 10–12 characters are displayed on the PM warmup screen.

## Using the VRA to create .RAC files

The VRA uses .RAC files to configure races. This file contains the information needed to configure race parameters such as the length of the race, the name of the race, race participant names, singles vs doubles, and so on. You can use the VRA to create the .RAC files without hooking up ergs. You will be able to type in names, and save the file. The application will complain about not having ergs, but you can still be successful in creating the files. The Class Variable (see below) cannot be introduced into a file using the VRA.

## Race Participant Information

Some things to keep in mind regarding your race participants:

- Participants should be advised of race start sequence.
- The instant “Row” is shown on the Erg screen, the clock in each PM has started. Any delay on the part of the racer is reducing their score.
- Participants can change units on the top half of the screen during the warmup, during the race, and after the race. They can press CHANGE UNITS starting when they see SIT READY. They can again press CHANGE UNITS when the word “ROW” disappears from the screen. The racing application does NOT change the units display on their screen.
- Scorekeepers taking manual times on paper should be trained to use the CHANGE UNITS button as needed to get the final score, or use the score on the next-to-last line on the lower half of the screen.
- Participants can, after the race is complete and all results collected, press the CHANGE DISPLAY button to obtain their splits.
- LogCards and USB flash drives are NOT PERMITTED during races.
- HeartRate monitors are not permitted nor will their heart rate be displayed.
- If an erg becomes disconnected from the computer during a singles race, the participant will see “Keep Rowing” in the space at the bottom. The PM4/PM5s will continue to keep the participant's score. The results may not be collected by the computer at the end of the race, so instruct the participants to write down their score right after they are done. The lower half of the screen is for informational purposes only and is NOT a guarantee that the participant will end in a particular place. There are many reasons why this data may not be perfect. For example, if the computer disconnects from one or more rowers (other than the participant's), the race continues, but the disconnected rowers scores will not continue to be displayed for other rowers.

- The instant “Row” is shown on the PM4/PM5s screen, the clock in each PM4/PM5s has started. Any delay on the part of the racer is reducing their score.
- Posters and informational sheets can be found on the Venue Racing software download page on Concept2’s web site.