

What is the Venue Racing Application?

- Creates (or loads preexisting) .RAC files
- Manages the race and various displays
- Creates results files
- The Venue Racing Application has its roots in eRow, but modified specifically to work with the PM3 and now the PM4

Vocabulary

- VRA = Venue Racing Application
- RIB = Race In the Box – refers to either the Concept2 supplied Laptop or the entire system provided by Concept2.
- USB = Universal Serial Bus, a method of connecting devices to a PC
- RS485 = Same as “Serial” (ie RS232 like the PM2+), except with a more robust electrical specification supporting multiple devices on one buss.
- “Hats” / “Expansion Modules” = add on to the top of the PM3 to add RS485 and/or Wireless capability. PM4’s have the connectors built in.
- Firmware = software programmed on a chip in the PM3 or in a “Hat”

Connection Methods Overview

2 Ways to connect the PM3s to the PC:

USB

- Two to 14 indoor rowers on a computer is easy!
- Up to 26 indoor rowers on a computer will work if carefully constructed, but not recommended
- Hubs and cables required
- Power to each hub needed
- Firmware in PM3 must be updated for older PM3s only

Wired

- Two to forty indoor rowers
- Setup (wiring) is very similar to PM2+
- PM3 Firmware Version 98 or higher is required; new indoor rowers should have Version 98, older will need to be updated
- PM4 Firmware should be updated to Version 17 or above

Software Installation

Preinstalled on RIB computers or get from: www.concept2.com/products/pm3/venue.asp

One package installs...

- PM3/4 Venue Racing Application
- PM3/4 Firmware Update

*** 2006/2007 Race Season: Make sure you download latest version! (2.8.9 or above)

System Requirements

- RIB Laptop or your own PC
- 1Ghz or faster processor
- USB 2.0 ports
- Windows XP Home or XP Pro
- Windows XP Service Pack 2
- Current PM3 Venue Racing Application
- Optional: High-Quality Video Graphics such as Radeon 7000 or 9000 series with 32M (or more) video memory for dual-display purposes.
- 2G of hard disk space available

System Recommendations

- Turn off power management features, screensavers, etc
- If using USB and an unknown PC, check the USB chipset in use
- Read users manual and web site for more recommendations

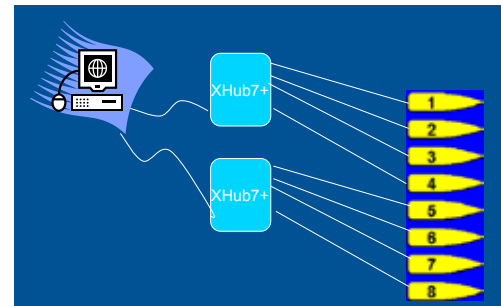
Updating PM3/4 Firmware

Why Update?

- To ensure that the firmware is correct for the Venue Racing Application. Older PM3s do not support Venue Racing.

When to Update?

- Only PM3s received before Aug 1, 2006
- Best to check PM3 version for Ver 98 or above: More Options > Utilities > Product ID page
- Unlike 2005, no need to downgrade after races
- If using "Hats" that did not come from Concept2 before Oct 2005, you may need to erase any firmware contained on the Hat. If this is the case (productID shows ver 63 for example), use the Erase Hat shortcut in the racing folder.



Updating PM3 Firmware

Basic Steps:

1. Install latest version of VRA suite
2. Attach up to 14 PM3s to the PC using 2 hubs (do not chain the hubs together)
3. Launch the appropriate update icon
4. Start the update process
5. Wait for it to complete
6. Repeat with more PM3s as needed

PM3 Firmware Update Troubleshooting

The PM3 "Gang" update utility is not foolproof. It is a convenience provided to save you time in the update process. It has not been proven 100% reliable! If you run into trouble...

- Use USB Troubleshooting techniques to determine the cause of the problem.
- If one or more just do not update properly but others are continuing to program, then do NOT unplug the offending PM3 – let the rest complete properly and retry that unit with a later batch.
- Try fewer units
- If having trouble updating many units at one time, try not to mix “Loader” versions (see Product ID page).
- Try updating them one at a time. If updating older PM3s one at a time, you may wish to use Concept2’s “One Step Updater with Loader Update”.

Setup Wizard

- Wizard starts when you run the app
- Walks you through the setup process
- Walks you through setting up your first race
- Cancel the Wizard at any time

Steps

1. Start the application
2. Choose a connection method
3. Discover the ergs
4. Enumerate the indoor rowers
5. Verify the setup
6. Create a new race

Discovery of PM3s

Discovery is the process by which the computer determines how many PM3s appear to be communicating properly.

Note: First time setup will only show the PM3/PM4’s that are directly attached to the PC. Units attached via network cables are discovered during enumeration steps.

Enumeration of PM3s

Enumeration - the process by which we number the indoor rowers.

- AKA “Physical #”
- AKA “Lane #”
- Lane numbers DO need to be continuous (ie 1,2,3,4..10)
- Lane numbers DO NOT need to start at 1. They can start at any number. This is useful for races that have multiple race lines, like 2 computers with 20 indoor rowers on each computer.

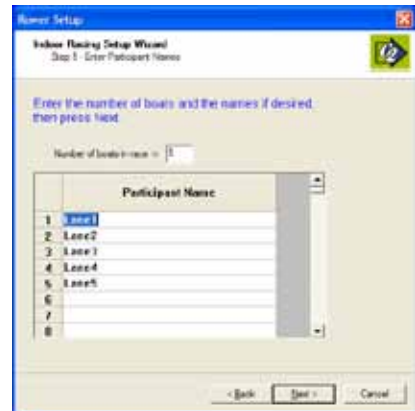
Enumeration Process

1. Select “Number All indoor rowers” from the menu
2. PM3 will show “?” on all the screens
3. Select “Request” on PM3
4. PM3 will show “Offered #1”
5. Select “Confirm” on PM3
6. Repeat with rest of the PM3s
7. Click “Done Numbering” on PC

Verify the PM3s

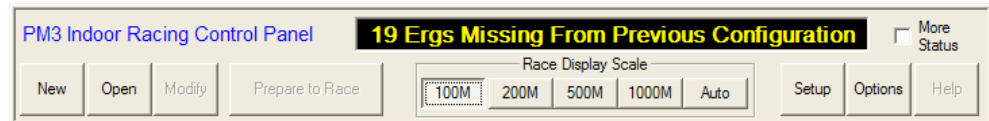
- Walk the line of Ergs and make sure they are numbered the way you want them

Create a New Race



Control Bar

- Status line
- Status Window
- Views
- View Options



Race Sequence

- Create or Open a Race
- Starting
- While race is running
- Finishing a Race

USB Connection Method

Materials Needed:

- 7 port USB hubs (one for each 6 indoor rowers)
- Power to each Hub
- USB Cables (one for each hub and each erg)

Optional Materials:

- Hub Brackets
- Strain Relief Brackets

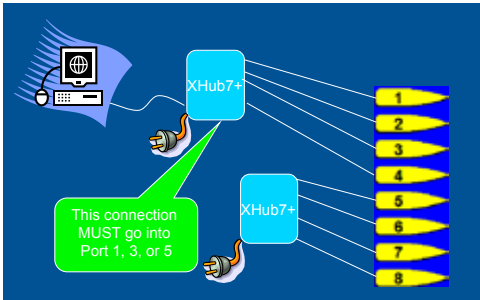
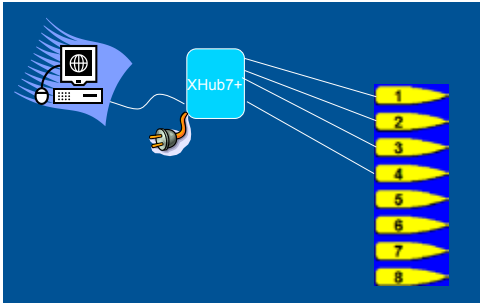
USB - Preparation

- Plan the layout you will use
- Update all the PM3s to be used with newer firmware

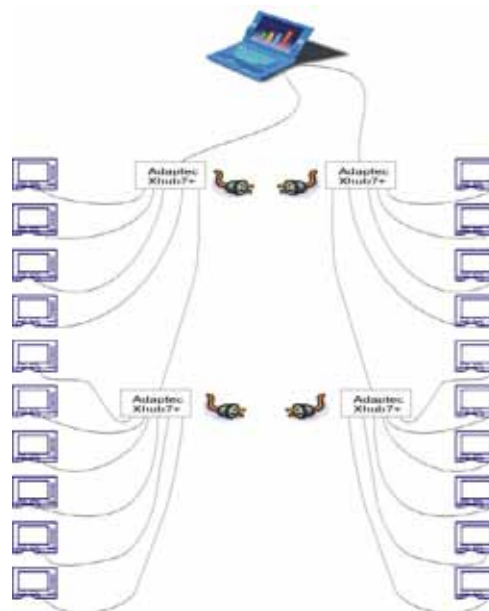
USB - Setup

1. Connect PM3s to Hubs to PC (see wiring diagrams!)
2. Discover the PM3s
3. Enumerate the PM3s
4. Verify numbering of PM3s
5. Test the system

USB Wiring - Basic



USB Wiring Diagram



USB - Discovery

1. Add all the PM3s
2. Run the Venue Race Application



3. Use the Wizard and select "USB"



4. Ensure that you find all the PM3s



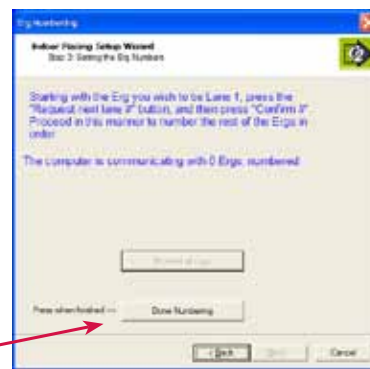
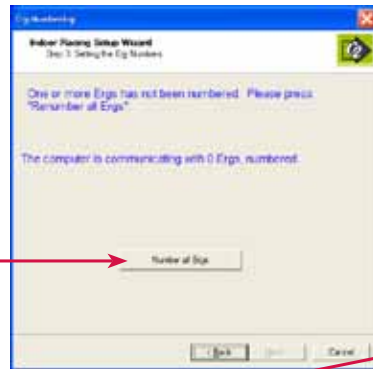
5. If not all are found, click "Help" for suggestions (and use printed troubleshooting guidelines)



USB - Enumeration

After all PM3s are successfully discovered, they must be numbered:

1. Click on **Number All Ergs**
2. Press buttons on PM3s to number them



3. Click Done Numbering when finished

USB - Troubleshooting

- Unplug and Re-plug; wait several minutes!
- USB 2.0 Cable for Hub ↔ Hub and Hub ↔ computer
- Only chain on Port 1 of a Hub
- Lights on Hubs
- Device Manager
- Rediscover / Rename
- USB Chipset in computer

Wired Connection Method

Definition: Wired connection is much like the wiring used for eRow and the PM2+: Connection is made from one indoor rower to the next using phone-style connection cables.

Materials Needed:

- USB Cable for each Master (usually 1 or 2
Note: Can use the USB cable that comes with the indoor rower
- PN 1983 “Hat” for each indoor rower
- Ethernet Patch cable for each indoor rower
- Terminators in any unused jacks on the hats.
- Reset tool or paperclip

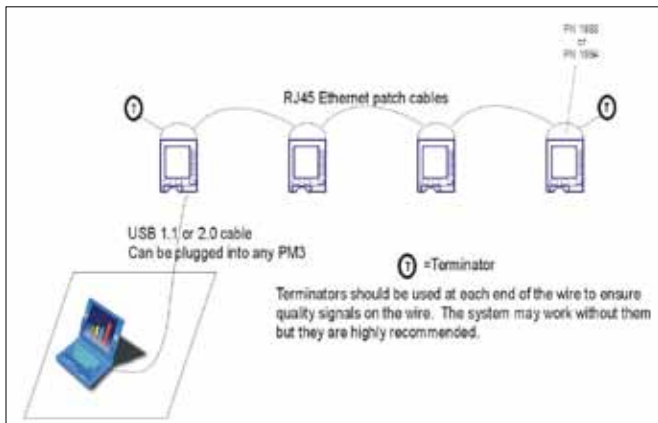
Optional Materials:

- Strain Relief Bracket for each indoor rower
- Extra PM3 and long Ethernet cable so PC can be > 15’ away from closest indoor rower
- USB Hub

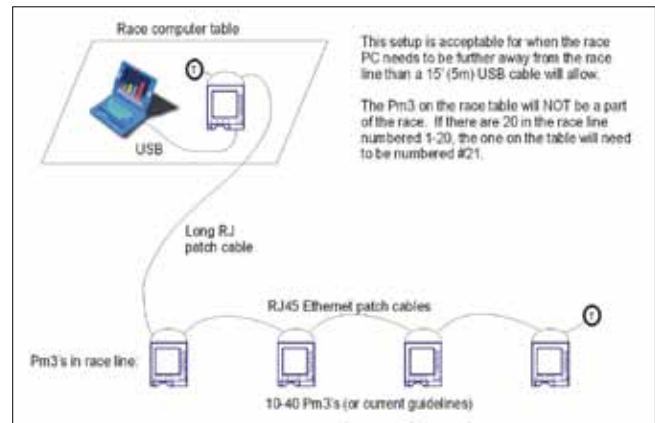
Wired - Preparation

- Plan the layout you will use
- Gather all the materials

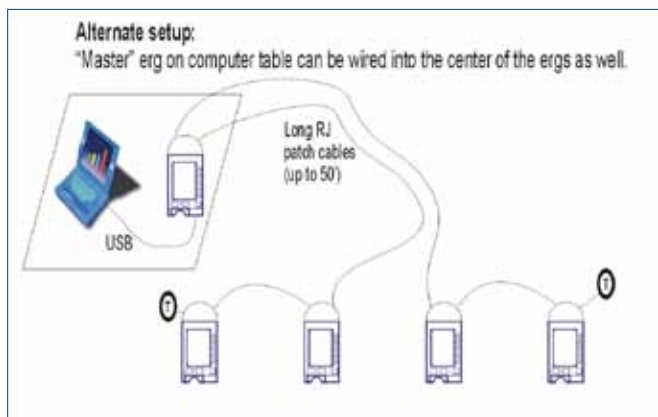
Wired - Layout 1



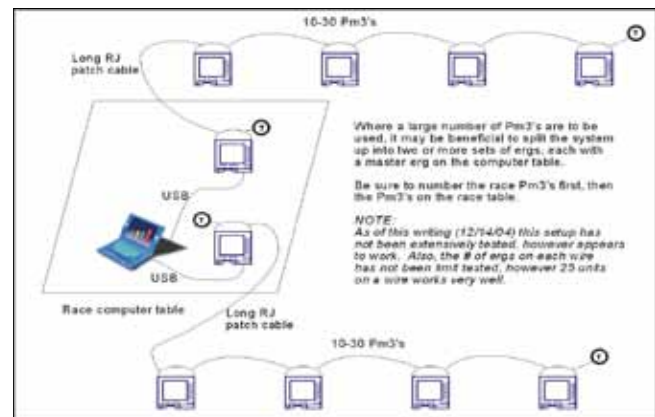
Wired - Layout 2



Wired - Layout 3



Wired - Large Venue Layout



Wired - Setup

- Prep each PM3
 - > Verify Ver 98 or above, if not update!
 - > Remove battery screw and cover
 - > Add "Hat"
 - > Reset using tool (insert pin into reset hole)
- PM4's: Just follow steps below...
- Cable together (see wiring diagrams)
- Add terminators to any empty sockets
- Discover/Enumerate the PM3s
- Verify numbering of PM3s
- Test the system

Wired - Discovery

- First time – Discovery will ONLY discover the Master PM3s that are attached via USB to the PC
- Renumbering will show all previously numbered PM3s.
- Discovery and Enumeration take place at the same time!

Wired - Enumeration

Process is the same as USB – Walk the line and press buttons

Wired - Troubleshooting

- Check all connections & make sure all connectors are FULLY inserted
- Check terminators are plugged in to any empty sockets
- Check firmware in all PM3s is correct version
- Check USB Cable connection to Master indoor rower
- “Number All Ergs” button, all should change to “?” screen
- Exchange “hat” for suspect troublemakers

Wired - Cable Testing Mode

- Exit Venue Race Application
- Reset all PM3s so they are on main menu
- On any PM3, select: More; Race; Communication; Utilities; Cable Test
- Observe LED's on other PM3s (see next page)

LED Status Indications

- Solid Green – No connection
- Solid Red – Connection lost
- Fast blink yellow – Connection was lost at least momentarily but it has since returned. This indicates a brief problem or intermittent cable or connection. Beware! Find the problem before race time!

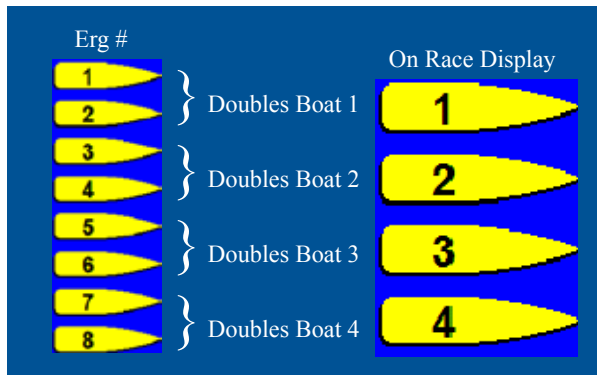
Cable Test Process

- Ensure terminators are installed, (lack of terminators may not show faults properly!)
- Start Cable Test on any PM3
- Observe other PM3s LED are Fast Blink Green
- Wiggle ALL cable connections and terminators
- If all LED's stay Fast Blink Green, then the cabling and hats seem to be good
- If YELLOW, faults are present and should be discovered before race day! Cancel/Restart test and continue wiggling until fault is found
- There are known bugs with Cable Test mode which will likely cause problems, so after using Cable Test – Please reset all PM3s

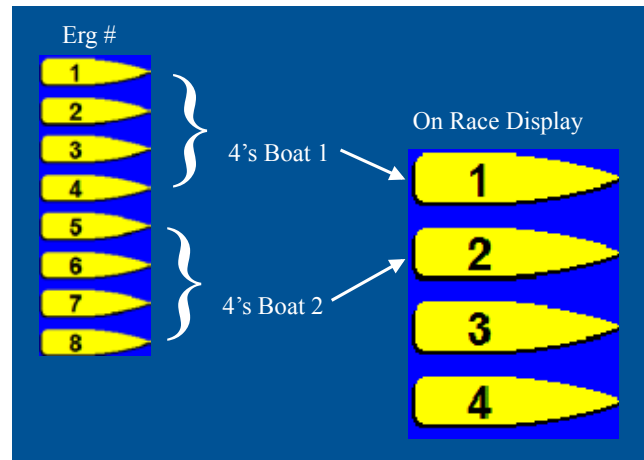
Team Racing

- Definition – when 2, 4, or 8 team competitors scores are averaged together
- Setup
- Indoor rower Placement (what indoor rower are in what team/boat)

Team Boat Diagram - Doubles



Team Boat Diagram - 4's



Information for Race Participants

Advise participants of several points:

- New Race Start sequence is no longer a countdown—see handout samples provided.
- Clock starts when “ROW” is shown on display
- PM3 display shows competitor’s information on bottom half of display

Race Displays Prior to Race Start

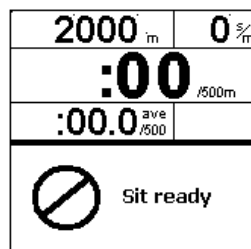
During Warmup



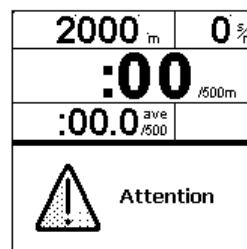
Just Before the Start



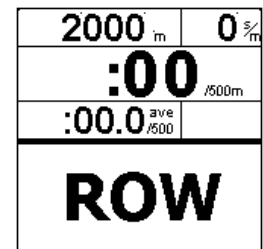
Race Start Sequence



Random start:
1-3 seconds
or Modified
start: Mouse
click



Default:
Random
Delay 1-3
seconds



Race Display

With Multi-class races, you see only the competitors in your class.

At the finish, the +/- meters area will change to finish time.

1530 m	32 s/m								
1:42									
/500m									
1:53.2									
ave /500									
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">1 Rob Waddel</td> <td style="width: 20%; text-align: right;">+23 m</td> </tr> <tr> <td>4 Steve Redgr</td> <td style="text-align: right;">+ 9 m</td> </tr> <tr> <td>5 Dick D.</td> <td></td> </tr> <tr> <td>6 Pete D.</td> <td style="text-align: right;">-12 m</td> </tr> </table>		1 Rob Waddel	+23 m	4 Steve Redgr	+ 9 m	5 Dick D.		6 Pete D.	-12 m
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4 Steve Redgr	+ 9 m								
5 Dick D.									
6 Pete D.	-12 m								

Customary Display Information

The bottom half of the display shows the competition

- ◀ The competitor in FIRST place
- ◀ The competitor JUST AHEAD
- ◀ You
- ◀ The competitor JUST BEHIND

Advanced Topics

- Import .RAC File Format
- Use of the Class Variable
- Export File Formats
- Managing Large Races
- Running other programs on the Race PC
- Networking PC's

.RAC file format

- No changes to .RAC file format from eRow
- Can use eRow, VRA, or ErGO! to create .RAC files
- Can use your own program
- Very important to TEST your files!

Class Variable

- Within eRow and VRA when you create a race, all participants are in one Class, ie they are all competing against everyone connected to the computer
- If you have a .RAC file with multiple classes defined, each class of competitors are competing in their own race
- You can have up to 10 Classes
- Refer to manual for more information on the Class variable and how to use it
- If creating your own files, exercise extreme care and test your files!

Export File Formats

- Same file export format as eRow except for team races
- Splits files for Team races has been modified to add detail of individual rower's splits
- Refer to manual and/or web site for more information

Managing Large Races

- Education of competitors about what to expect
- Avoid confusion by numbering all lanes sequentially (ie front ergs 1-10, back ergs 11-20)
- Use of race management software like ErGO!
- Careful choice and management of audience displays
- Careful coordination and training of floor staff and computer operators
- See users manual and users forum for other ideas

Running other programs on Race PC

- Is it worth the risk?
- A text editor to modify a .RAC file is fine.
- Large applications (ErGO!, etc.) during discovery, enumeration, and during race: Not recommended

Networking PC's

- For Wired or USB racing, network all you want, just keep the traffic to a minimum during races.
- Concept2 does NOT recommend running ErGo on the same computer during races.

Where to Get More Information

- PM3 Venue Racing Application Users Manual
- Wiring Diagrams
- Venue Racing Forum
- Concept2 Web Site

Emergency Support

First Choices for Support:

- Scott Hamilton (scotth@concept2.com – email & MSN Instant Messenger)
802-888-5226 x3062 (Concept2)
802-253-8286 (home) 802-279-6753 (cell)
- Shawn LaRose (shawnl@concept2.com, ext 3042)
802-644-5408 (home) 802-363-6773 (cell)

Second Choices for Support:

- Brickett Bailey (brickett@concept2.com, ext 3037, home# 802-888-7956)
- Lisa Washburn (lisaw@concept2.com, ext 3052, home# 802-888-3213)

Emergencys Only!

- Mark Lyons (mlyon@updesigns.com)
Office: 802-985-2535 / Mobile 802 238-9686
- Andrew Dombek; (adomb@updesigns.com)
Office: 802-985-2535 / Mobile 802 238-9100

ErGO! By Eileen Corelli

ErGO! Is an Indoor Race Management Database. It is a tool to help you:

- Schedule athletes into their events (including from web-based registration lists),
- Automatically assign seats to athletes
- Create E-Row & PM3 Venue Race App Files
- Upload results files
- Quickly generate results

eMail: ecorelli@earthlink.net