

Appendix B. MultiPort Interface Box Installation and Setup

The SonTek/YSI MultiPort interface box allows you to connect up to six SonTek/YSI systems using Ethernet connectivity and control. Note: At present, the MultiPort only supports SonTek/YSI Acoustic Doppler Velocimeter (ADV) systems; ADPs and Argonauts are not supported. As such, all examples in this users guide will refer to ADV systems.

The MultiPort is based on the Ether6 product line manufactured by JK microsystems, Inc.

Note: MultiPort operation does not allow you to perform beam checks, or to load probe configuration files (*.pro), Druck configuration files, or compass configuration files. To conduct these operations, you must connect to each ADV individually.

B-1. MultiPort Contents

The SonTek/YSI MultiPort ([Figure 45](#)) includes:

- (6) RS-232 I/O ports (on back panel) to connect to SonTek acoustic Doppler systems
- (1) 10-megabit Ethernet port (on back panel)
- (6) ADV data cables (RS-232 + Sync line) [MultiPort to ADV interfaces]. Note: (1) cable has an RJ-45 connector for **ADV1**; (5) cables have an RJ-12 connector for **ADV2-ADV6**.
- (1) Configuration cable [MultiPort to PC interface]
- (1) Ethernet cable [MultiPort to LAN interface]
- (1) AC-to-DC power adapter (to power the MultiPort)

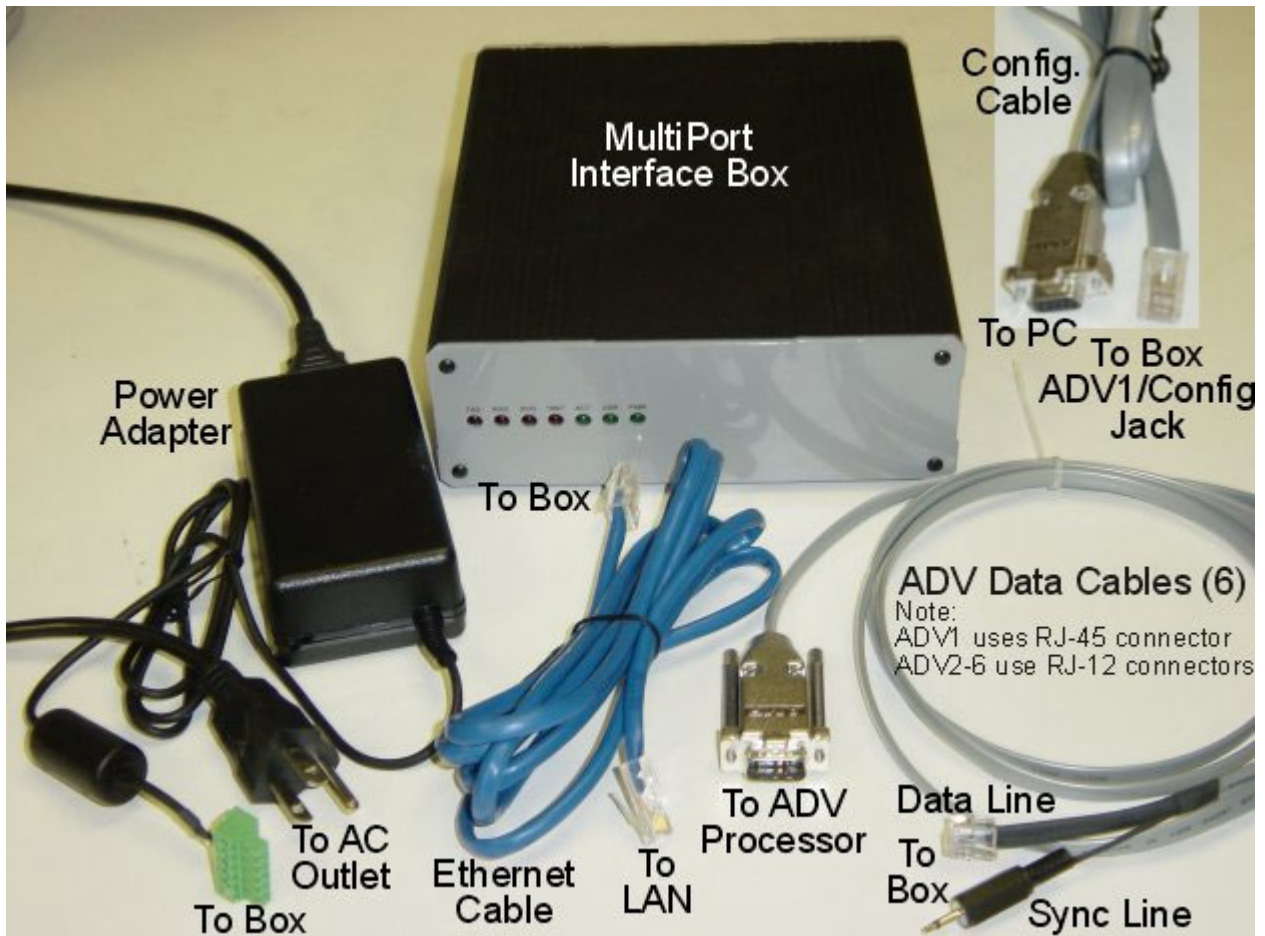


Figure 45. MultiPort Interface Box and Accessories

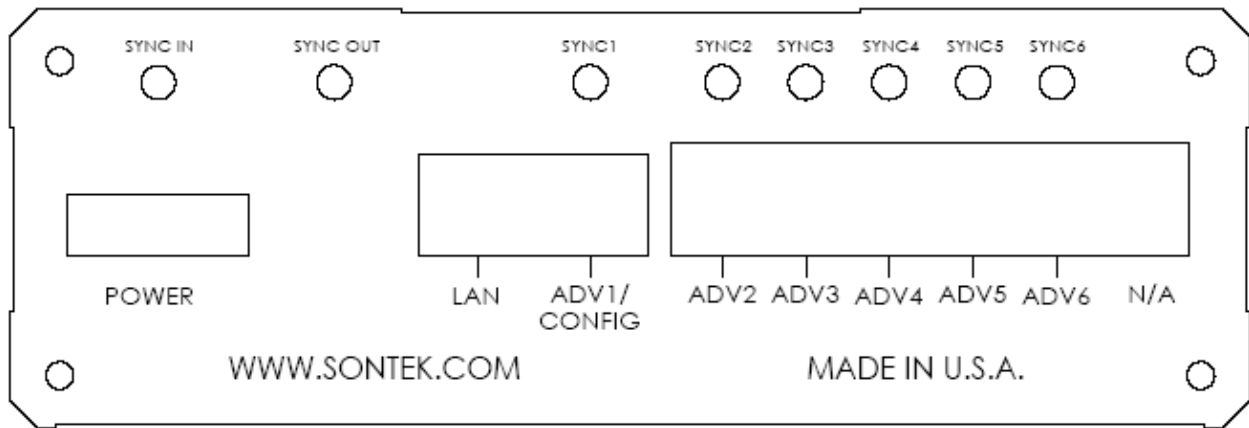


Figure 46. MultiPort Interface Box – Back Panel

B-2. MultiPort Back Panel

Figure 46 shows the back panel layout of the MultiPort.

- **POWER** – Connects to the power adapter. Note that there is no separate power switch on the MultiPort. To power the MultiPort on/off, you must plug/unplug the power adapter.
- **LAN** – Connects to the Ethernet being used to communicate between the MultiPort, PC, and ADV systems.
- **ADV1** through **ADV6** – Connects to the separate ADV systems. Note that **ADV1/CONFIG** is also used to connect to a PC to configure the MultiPort interface box. The **ADV1** port uses an RJ-45 connector; **ADV2-ADV6** use RJ-12 connectors.
- **SYNC1** through **SYNC6** – Connects to the synchronization signal for each of the separate ADV systems.
- **SYNC IN / SYNC OUT** – Not used.

B-3. MultiPort Front Panel

Figure 45 shows the front panel layout of the MultiPort.

- **LAN** – The red LED indicates that the Ethernet port is connected. The green LED indicates Ethernet activity.
- **Power** – Indicates that power is available to the MultiPort device.
- **Status**
 - Off – Indicates the MultiPort is not connected to a PC or other client.
 - On (blinks every 2 seconds) – Indicates the MultiPort is connected to a PC or other software client.
 - Flashing – The MultiPort is connected to a system that is performing data acquisition. The flashing rate is double the sampling rate frequency.

B-4. MultiPort Installation Instructions

B-4.1 Unpack the MultiPort

Check the shipping container and its contents for obvious damage. Verify you have received all the expected items. Standard items are shown in Figure 45. Contact SonTek/YSI if any items appear to be damaged or missing.

B-4.2 Install the Software

If you have not previously installed the *HorizonADV* software program on your computer:

- _ Insert the ADV software distribution CD into your computer's CD-ROM drive.
- _ Wait a moment for the ADV Software menu to appear.
- _ Click **HorizonADV Setup**. This will install both the *HorizonADV* software and the *MultiPort Network Configuration* software. Follow the on-screen instructions. We recommend that you use the default installation paths, especially if other SonTek programs already (or will) reside on this computer.
 - Note: If the installation menu never appeared, use either *Windows Explorer* or **Start|Run** to locate and run `\HorizonADV\HorizonADV.exe` from the CD.

B-4.3 Interconnect and Configure the MultiPort Interface Box

You are now going to interconnect the MultiPort interface box and configure it for Ethernet operation. At this point, you will not be setting up the ADV instruments. Refer to [Figure 46](#).

- _ Ensure your PC is connected to the LAN that will be used to communicate with the ADVs.
- _ Connect the ethernet cable between your LAN system and the **LAN** jack on the MultiPort.
- _ Start the *MultiPort Network Configuration* program (**Start|Programs|SonTek Software|MultiPort Network Configuration**). Follow the on-screen instructions ([Figure 47](#)):
 - Connect configuration cable. Connect DB-9 end of the cable to an open COM port on the PC. Connect the other end of the cable to the **ADV1/CONFIG** jack on the MultiPort.
 - Apply power to the MultiPort. Connect the DC side of the power adapter into the **POWER** jack of the MultiPort box. Connect the AC side of the power adapter into an AC outlet. The **Power** LED on the front panel of the MultiPort box should light. There is no power switch on the MultiPort box; to power it on/off, you must plug/unplug the power adapter.
 - Click **Connect** in the **Multi-Port Network Setup** dialog box.

- _ If no entries exist in the **Network setup** fields ([Figure 47](#)), or if you need to change the settings ([Figure 48](#)):

- Enter the **IP address** that will be used on your LAN to control the ADVs. Consult your network administrator if necessary.
- Enter a **Subnet mask**. Recommended value is **255.255.0.0**.
- Enter an **IP port**. Recommended value is **4040**.
- Click **Submit** and verify the changes were accepted.

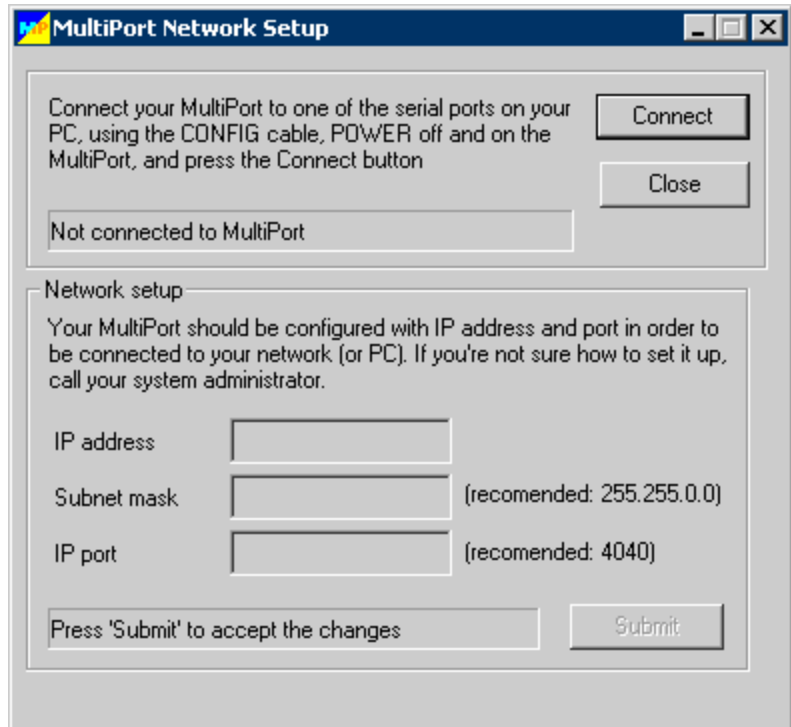


Figure 47. MultiPort Network Setup Dialog Box

- If the MultiPort has been configured successfully, click **Close**. If not successful, check your cable connections and IP addressing information.
- Disconnect the configuration cable from both the PC COM port and the **ADV1/CONFIG** jack on the back panel of the MultiPort box.
- The MultiPort box is now ready to be used to set up and communicate with your acoustic Doppler devices. Refer to §B-5.

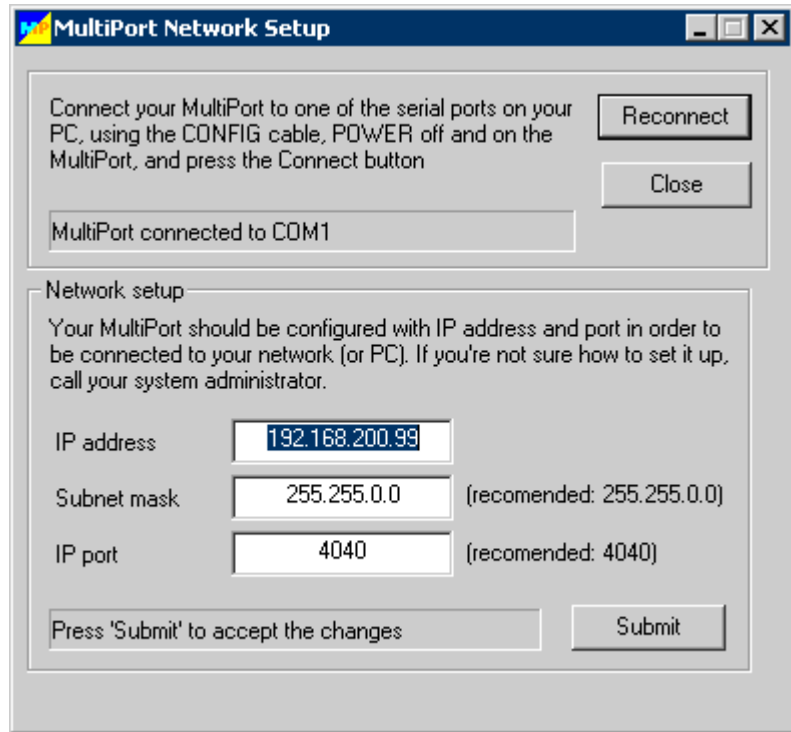


Figure 48. MultiPort Network Setup Dialog Box (Completed)

B-5. Data Acquisition Set Up

This section describes the basic instructions for interfacing your acoustic Doppler instruments using the MultiPort interface box. This section does not describe how to set up the individual instruments for data collection. For information on data collection parameters, refer to the system manual for your instrument.

The example shown in this section will make reference to SonTek Acoustic Doppler Velocimeters (ADV) and the *HorizonADV* program.

- Note: The ADV systems you connect to the MultiPort must be configured to a baud rate of 57600. Refer to your system manual to verify/change your system’s baud rate.
- If you have not already done so, interconnect and configure the MultiPort interface box as explained in §B-4.3. When you are finished configuring the MultiPort:
 - Remove the configuration cable from the **ADV1/CONFIG** jack.
 - Do **not** remove power to the box.
 - Do **not** remove the LAN connection. Note: The red **LAN** LED indicates the ethernet port is connected; the green **LAN** LED indicates activity.
- Connect the individual data cables (Figure 45) between the MultiPort box and the ADV Processor boxes. Be sure to connect both the Data Line and the Sync Line for each system.
- Start *HorizonADV* (**Start|Programs|SonTek Software|HorizonADV**).
- From the main menu (Figure 49), click **Connect to MultiPort**.
- In the **Connect to MultiPort** dialog box (Figure 50), enter the **IP Address** and **Port** of the MultiPort interface box. Note: To change the IP configuration, see B-4.3.

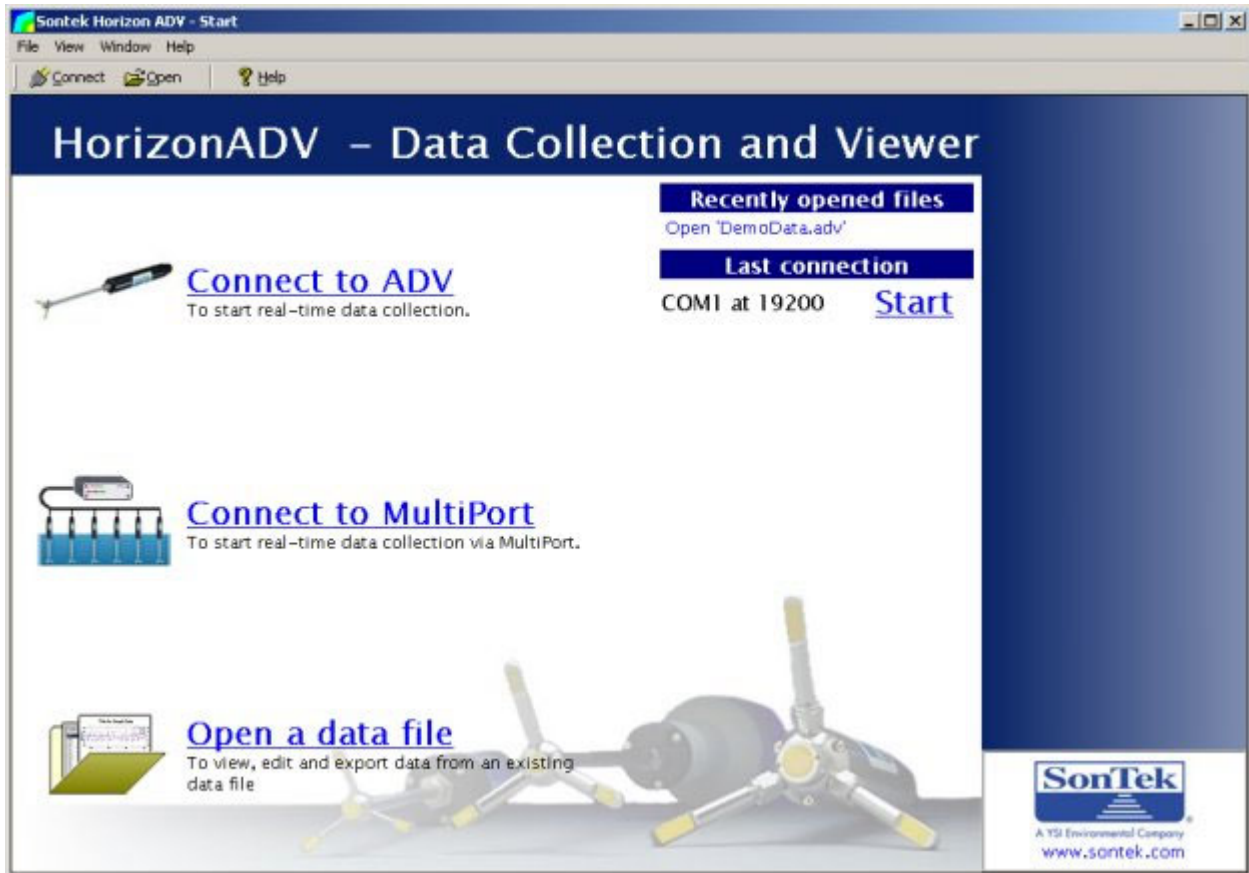


Figure 49. HorizonADV Main Menu

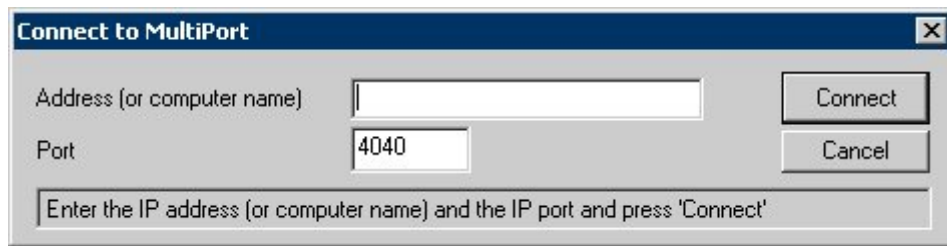


Figure 50. HorizonADV Connect to MultiPort Dialog Box

- Click **Connect**. If the LAN interface connection is successful, the **MultiPort session** menu will be displayed (Figure 51). If not successful, an error message is displayed.
- Click **Setup MultiPort** (under the **Tools and diagnostics** heading).
- In the **MultiPort port configuration** dialog box (Figure 52), select the MultiPort ports that are connected to ADVs, and then click **OK** to save the configuration. Note that there may not be a correlation between the **Port** number and the **Probe** number in the *HorizonADV* displays.
- In the **MultiPort session** menu (Figure 51), click **Setup ADV** to set up your data acquisition parameters (Figure 53). See your system manual and applicable sections in the *HorizonADV* manual for ADV setup details. Click **Save Settings** when your entries are complete.
- In the **MultiPort session** menu (Figure 51), click **Start Data Collection**. Check your ADV setting and verify each instrument's distance to boundary (Figure 54). If the entries are acceptable, click **Start Data Collection** to start data collection for the connected ADVs (Figure 55).

Note: If a probe is not in water and not within range of a boundary, a reading of **Not Detected** will be shown for the affected probe(s).

HorizonADV can only show data for one probe at a time. In the real-time MultiPort session display at the top of the screen (Figure 55), there is a << Probe n >> hyperlink (where n is the selected probe). Clicking an arrow will change the data screen to show the next/previous probe that is connected. Clicking **Probe n** displays a selection menu that lists all the probes.

Note: Data from all probes is recorded regardless of which probe is selected for display.

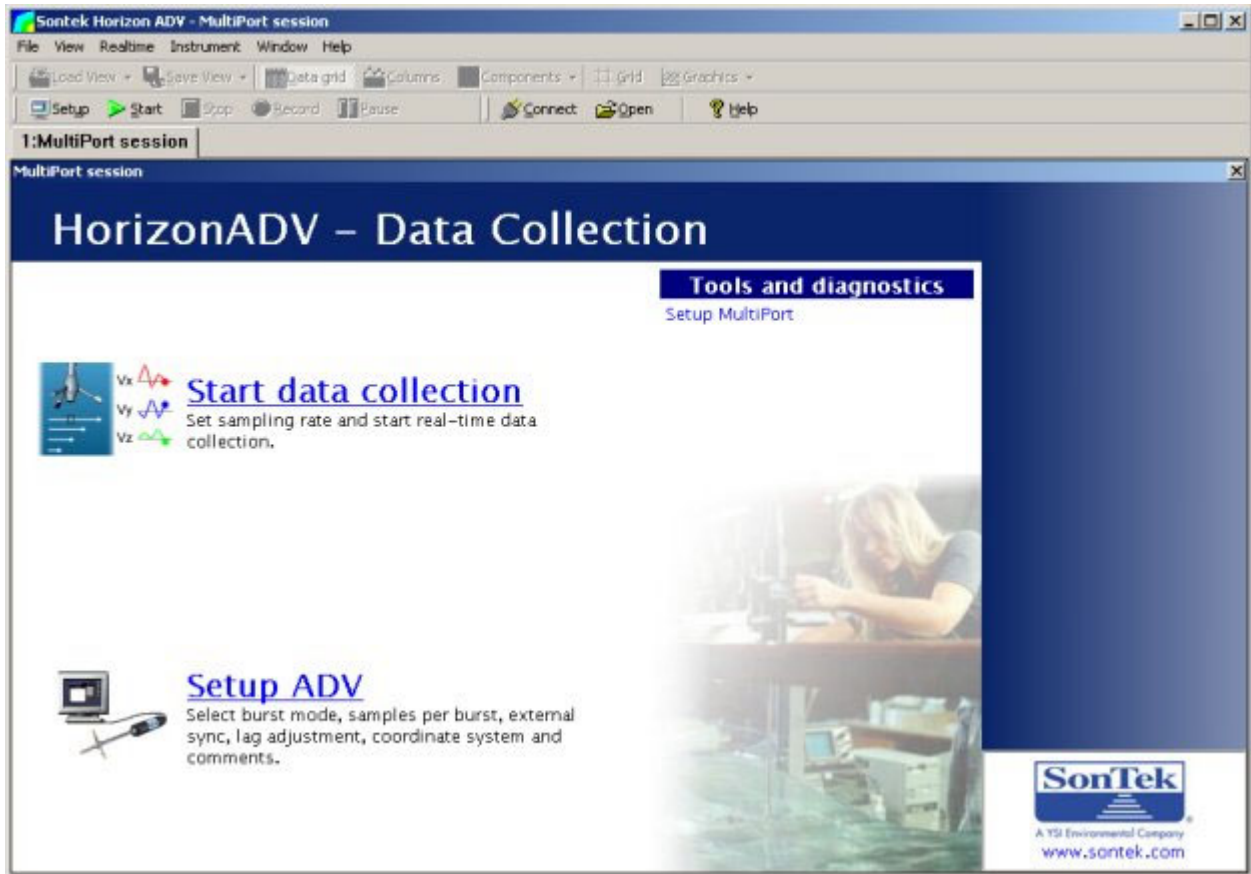


Figure 51. HorizonADV MultiPort Session Menu

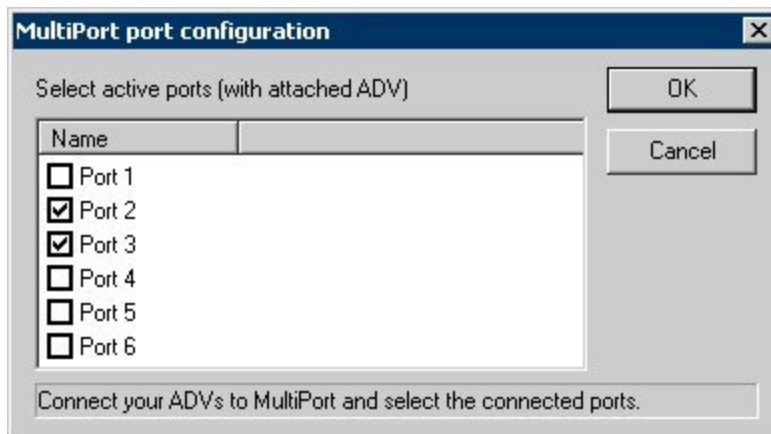


Figure 52. HorizonADV MultiPort Port Configuration Dialog Box

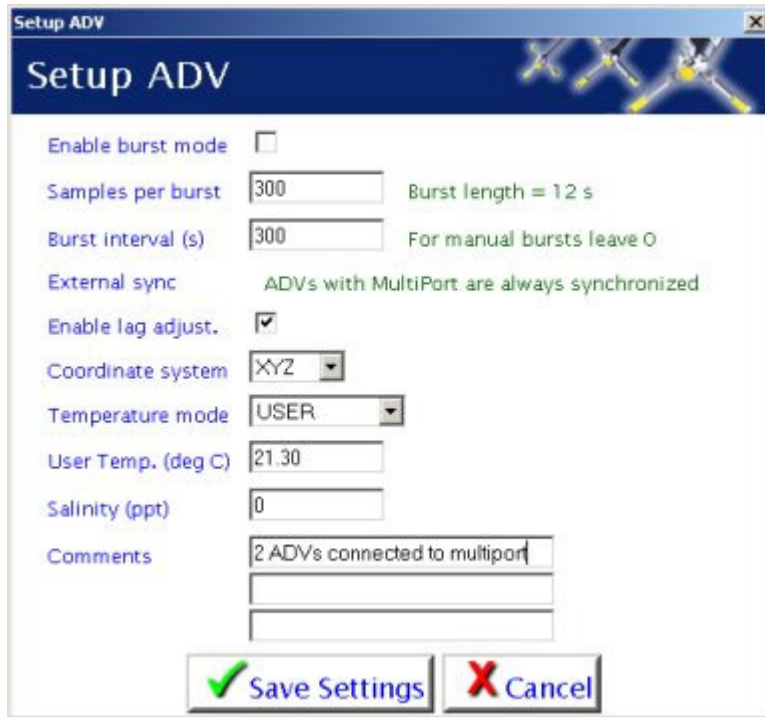


Figure 53. HorizonADV Setup ADV Menu

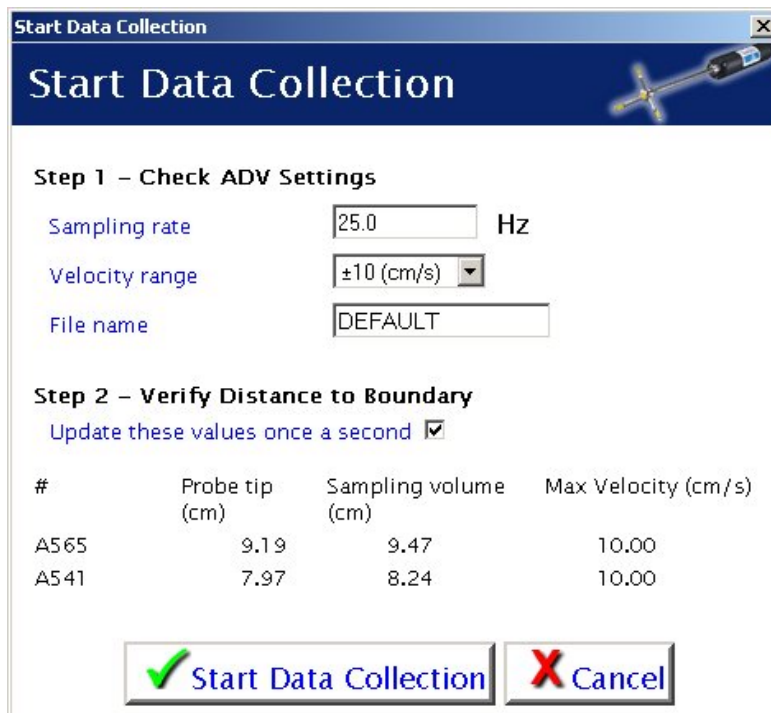


Figure 54. HorizonADV Start Data Collection Menu

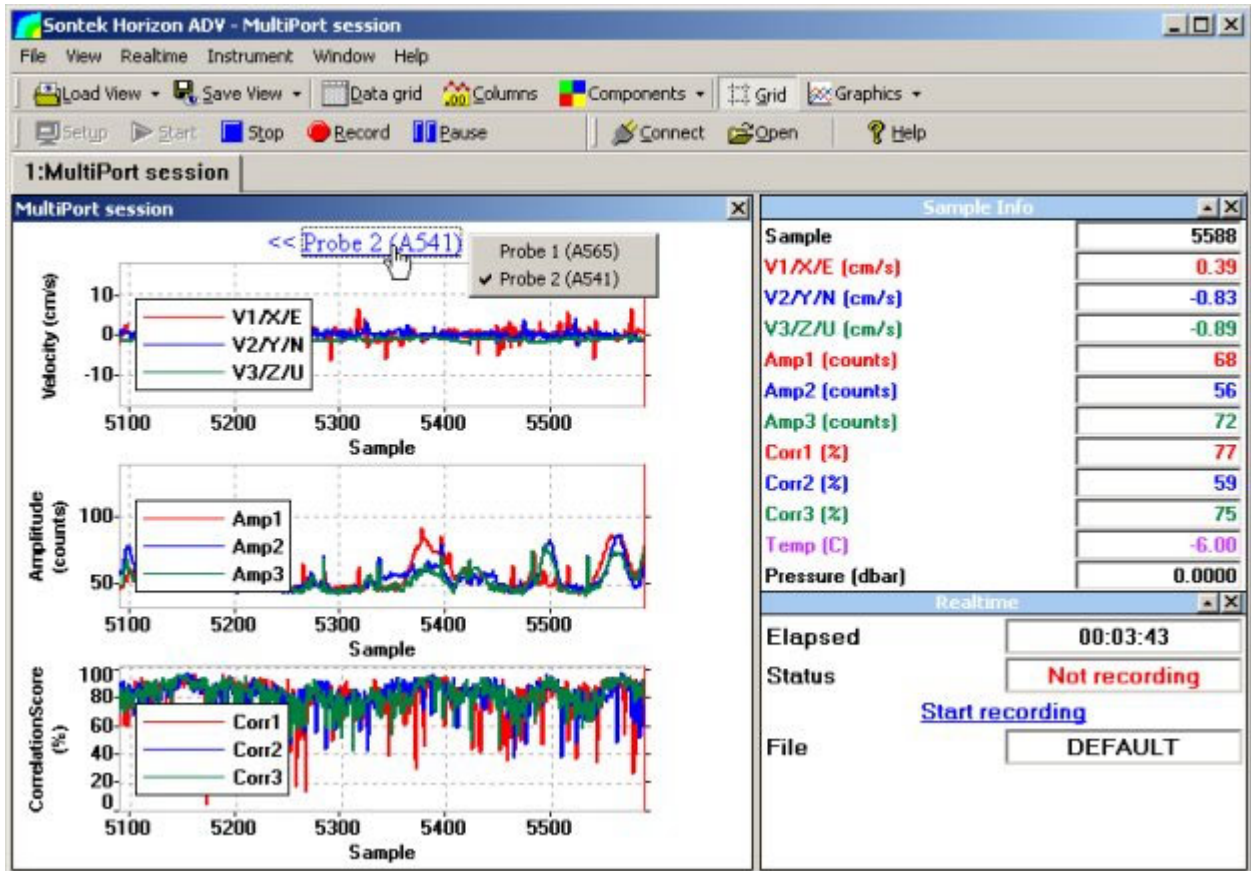


Figure 55. HorizonADV MultiPort Session Data Display for Selected Probe