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Introduction

P-Sea FishFinder is a new revolution for traditional color depth sounders. It has no display, just a box with power, transducer and Ethernet connector. Just connect the transducer, 12 power and a IBM compatible computer to it and with a little help from some software, you have a color depth sounder/fish finder that can have just about any size display. Connect up to three displays and have full control of the FishFinder from each station. You'll have bottom characteristics display to tell what type of bottom your going over. Past history in the form of graphs that allow you to scroll back in time and locate where the sounding was done at just by a click of the mouse. The data from the P-Sea FishFinder, depth, water temperature, biomass, bottom hardness and bottom roughness can be stored in track history of the P-Sea WindPlot II program. From this, the tracks change color any one of these outputs. An alternative mode allows you to set up a XY color grid of both bottom hardness and roughness. Then when the colors are set up properly you can tell what type of bottom, mud, clay, sand or rock your going over (or have gone over in the past) just by the current or past track color.

How the FishFinder works

The basic principle behind any FishFinder or Depth Sounder as they are so often called is sound. Sound travels through water at constant speed and the FishFinder measures the time it takes for the sound to bounce off the seabed and back to the boat. The FishFinder produces a very high frequency sound from what is called a transducer. The transducer is mounted in the water facing down towards the seabed floor. The FishFinder energizes the transducer with a high voltage pulse that is measured in Watts. This produces a sound is so high in frequency we can not hear it and so narrow that nearly all of the energy is focused at the seabed. This sound wave bounces back when it hits the bottom and it is altered slightly by the type of bottom it is striking. If it is rough, the beam will tend to vary greatly from pulse to pulse, we use this to tell the roughness. If the bottom is soft, the return from what is called the second echo will be real weak. The second echo is when it returns off of the ocean surface and back again making a second trip with the same sound wave. This is used to tell the hardness of the bottom. The transducer acts as an antenna for the wave that comes back. The signal is amplified by the black box FishFinder. The return is displayed on the right-most part of the computers video display. Any signal makes the dot on the screen light up and timed to the point where the sound was received. The color of the dot depends on the strength of the sound wave the transducer picks up. Usually red or brown is the hardest and light blue to white is the lightest. When it is time for the next pulse/sound wave to come in the picture is moved to the left by one dot with and begins to paint the next column of dots.

The FishFinder produces two frequencies. The reason for this is that some objects like sea bed or fish absorb the sound waves differently at different frequencies so you may need to use one frequency for one type of fishing than the other. The 50khz, low frequency wave in this FishFinder goes deeper than the higher 200khz frequency it produces. The lower frequency is closer to normal boat noises and is a wider energy beam and thus picks up more noise when underway than the 200khz.

P-Sea FishFinder Operation

Starting the FishFinder from WindPlot

- 1) Get P-Sea WindPlot II running if it isn't already
- 2) Click on the *Options* menu
- 3) Select "FishFinder"

If you get a message that ***Required file PCSOUNDER.EXE was not found***, can not start FishFinder then try reinstalling the program or it may be that your not starting it in the correct directory. If reinstalling does not help then try starting the program by clicking on *Start* then find it in the list of programs and click on it there.

If the Ethernet cable is not plugged in or the Ethernet port is disabled, you will get a message to ***Please plug the cable in and try again***". Look to make sure the cable is plugged in. When it is plugged in correctly you should get a green light by the Ethernet connector on the computer. Do not connect the CVB-20 directly to the Ethernet connection on the computer. It needs to go through a hub or use a cross over connector before it goes to the computer or you get this same message

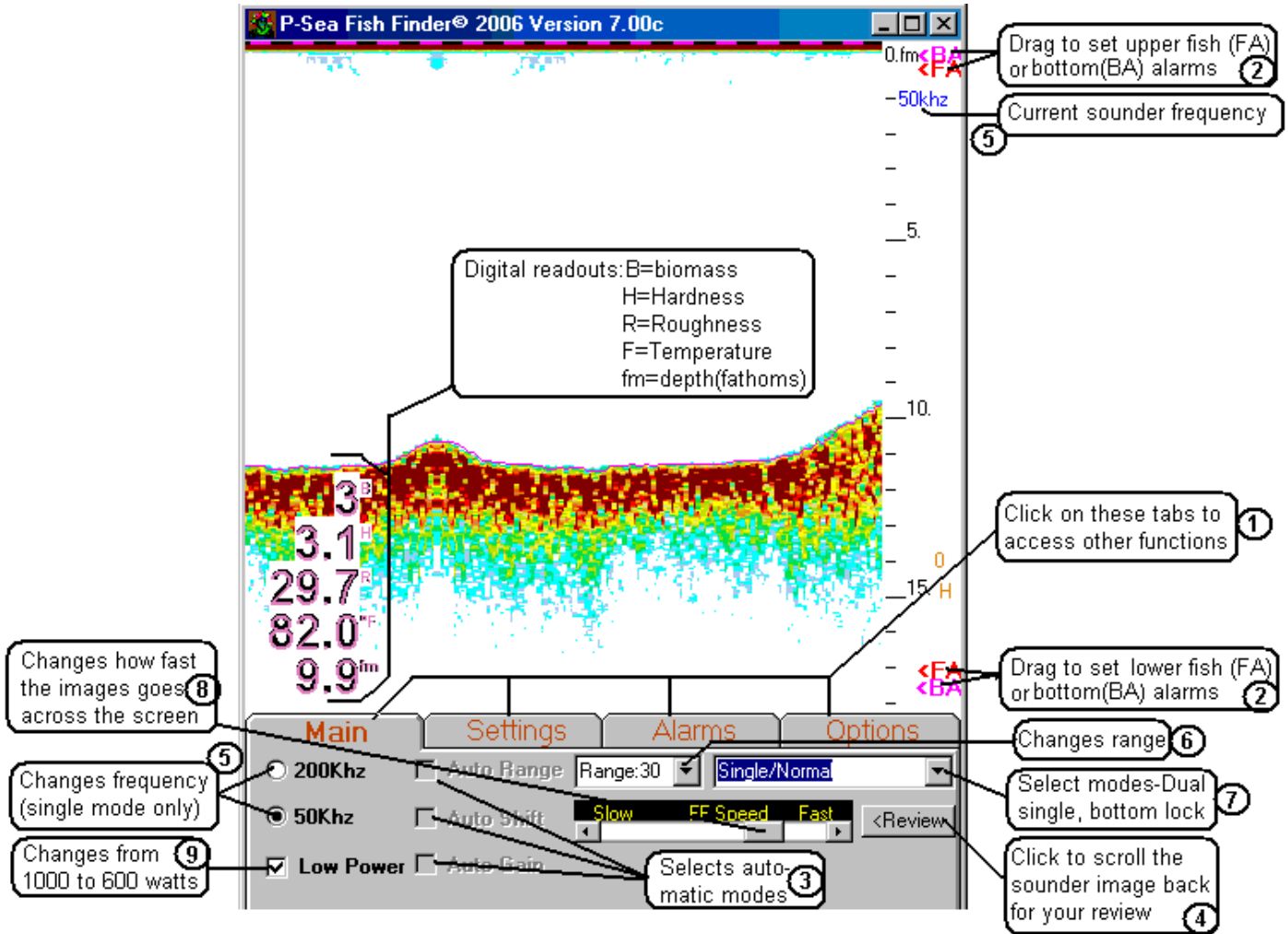
Setup PC IP: If you do not have the Ethernet port setup for the correct IP then you will get a message showing what the IP is and prompt you to change it to the correct IP numbers. There are four groups of number that make up an IP address and they are separated by a period. The IP you need to set your computer to is: **192.168.0.x** where **x** is any number between 1 and 255 excluding 32 as that is the default for the CVB20-A. The P-Sea FishFinder IP address is 192.168.0.32 and no two IP's can be the same on any system is why you can not use 32. See the appendix for instructions on how to change your computers IP address.

If you can start the FishFinder but you find you can't get the ranges or anything then check that the Subnet Mask is set up properly on your computer. You set it in the same place as the computer's IP is setup at and it must be **255.255.255.0** for the FishFinder to work properly. If your not connected to the Internet, turn off all fire walls as they can block the signal to the CVB20A. Fire walls are usually located on the system tray in the START bar. Just right-click and choose disable. In that case you should also remove the fire walls from the Windows start up menu.

When P-Sea FishFinder is set up correctly you should get a screen with the P-Sea compass rose logo and message that says *"Please Wait"* located near the bottom and a count-down timer in grey just to the right of that. The FishFinder will start in 30 seconds or less as displayed in the count-down. The FishFinder uses this time to search for other computers to log onto that are running the FishFinder. If it does find one then the message *"Scan IP"* located under the count-down will change to *Remote found*. When connecting multiple computers, please allow each P-Sea FishFinder program to complete the count-down before you start the next P-Sea FishFinder program. The computers can be running but do not start the programs yet until each count-down completes. When the count-down ends the FishFinder starts transmitting and the FishFinder image starts across the screen.

Using just the FishFinder program

The P-Sea FishFinder program is a self-contained program does not need P-Sea WindPlot II to work. It can be made to be a self-running program but you must create an icon for it so that you can start it by itself. To do this is fairly simple, just open the local disk "C" using *My Computer* and locate the *PC-PLOTT* folder. Open this folder and find the file named "PCSOUNDER" and right-click on it. Select "Send to" and click on "Desktop". This will create an icon on the desktop that you can start the P-Sea FishFinder program from. If your not using Windows XP then just click on "Create Shortcut" and then drag the new shortcut to the desktop.

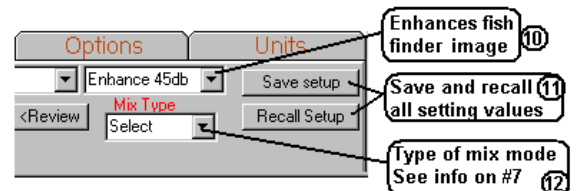


P-Sea FishFinder Screen Layout

The Main Control Tab

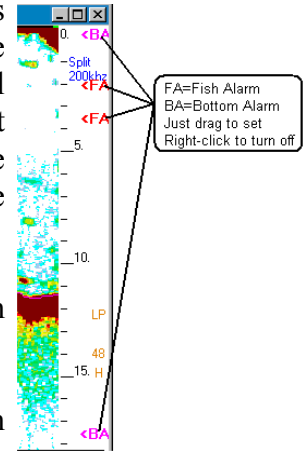
(1) The picture above show the basic P-Sea FishFinder screen as it appears when the program is first started. You have more options available by clicking on

This portion of the main tab is missing in the picture above because the picture isn't wide enough to show it. Simply drage the left side of the FishFinder to display all



Settings for changes gain, STC and other settings. Or click on the *Alarms* tab to start or cancel an alarm. Or click the *Options* tab to change the settings of other options such as Bottom Characteristics and digital readouts. The *Units* tab (not shown above) allows you to change the units of Depth, Speed and Temperature. The *Main* control panel/tab is showing above and is described next in detail.

(2) **Setting Fish and Bottom alarms from the screen.** The depth and fish alarms can also be set by dragging the <FA, <BA located along the right side of the screen. As you drag them you will see a line go across the screen and a digital readout that shows where the current alarm is at. If you wish to turn them off just put your mouse arrow on the label and click the right mouse button. When the alarm is activated, message will appear in the center of the screen and the computer will beep.



When the TOP <BA control is set above the bottom, the alarm will trigger when the depth becomes shallower than the <BA is set for.

When the BOTTOM <BA control is set below the current bottom, the alarm will trigger when the depth get deeper that where the control is set at.

When setting the fish alarm you need to do both upper and lower alarm settings in order to make it work properly. It does not matter which one you drag first, just drag either the top or bottom <FA to the upper or lower depth limit then do the same with the other. The CVB20A will then start looking for fish in between the two <FA's according to how you have the fish length and fish color rejection setup in the "ALARMS" control tab. This will be explained better later when the ALARMS tab is discussed.

(3) The *Automatic* function shown above are greyed out and not accessible as shown when the bottom characteristics is turn on as BC has it's own automatic functions that do not allow these to be set. The automatic modes should be self-explanatory.

(4) When you click the review button it changes to a *Resume* button and the Fast/Slow slider changes to a scroll bar and the cursor on the P-Sea WindPlot II screen is turned on. Moving the scroll back rolls the depth FishFinder picture back and the cursor moves to the location where that sounding was made. The length of this history depends on how fast the screen image is moving and the amount of pixels to store. The default is 4000 pixels(soundings) but you can change this to just about any length if you like as discussed in the *Settings* tab section following this. Be careful though, changing this value too high can cause unusual operation like jerky screen or momentary freeze depending on the speed and RAM in your computer. When you increase this value, try increasing at 2000 to 4000 increments, running the FishFinder for an hour or so and see how it works. The memory resets when you hear a beep (if your computer is equipped with a internal speaker). If it works ok up to this point then it is ok to increase it some more.

As said before, when reviewing the sounder image, P-Sea WindPlot's cursor is automatically turned on, and the cursor will move on the chart to the same location where the mouse arrow is on the past sounder image. P-Sea WindPlot cursor is automatically turned of when you click the RESUME button.

(5) When in single-frequency mode, you can change what frequency by clicking on ether the 50 or 200khz option boxes. The lower frequency 50khz can penetrate deeper than 200khz because the higher frequency's energy wave is absorbed faster by the water. It usually has a wider beam as well and is more sensitive to noise from the engine or turbulence. The bottom classification option will usually work better on the 200khz but as stated before, it won't work as deep as the 50khz mode. When in dual-frequency mode the 50/200 selection does nothing except to let you know what frequency you will be on when you leave the dual-frequency mode.

- (6) This changes current P-Sea FishFinder range, Click the arrow to the right where it says range in the main control panel to change ranges. This function is disabled when the auto-range is selected or auto shift mode is selected. The drop-down selection style allows for the use of a touch screen to change ranges. The only ranges you can use is listed in this drop-down box, do not try to enter any value other than what is listed.
- (7) There are **8** different FishFinder modes that is selected by clicking on the drop-down arrow next to the range selection box. **Mode#1:** The *Single/Normal* mode displays either frequency. **Mode #2:** The *Dual 50/200khz* mode splits the FishFinder screen showing both frequencies at the same time. **Mode #3:** The *Mixed/Normal* splits the screen again but this time the left portion is a combination of both 50 and 200khz and the right is the selected frequency in normal display. **Mode #4:** The *Single Bottom Zoom* causes the bottom to be displayed and magnified by the amount set in the *Expand Rng.* box. **Mode #5:** The *Dual Bottom Zoom* causes the same as #4 but splits the screen and shows both frequencies. When in the two above zoom modes, make sure the zoom range is less than the normal range. **Mode #6:** The *Bottom Lock/Normal* mode splits the screen, with the left showing an expanded image where the seabed is locked to the bottom of the screen and the right portion is a normal FishFinder image. **Mode #7:** The *Zoom/Normal* splits the screen with a normal FishFinder image on the right and a zoomed picture on the left. This zoom is different than #4 and #5 zoom in that you select where the zoom starts manually so you have both *Expand Rng* and *Zoom start* selection boxes. **Mode #8:** The *Bottom Lock/Normal* mode is like #6 but the seabed is raised from the bottom of the screen just a little so you can see its shape.

When in the 3rd MIX mode is selected, you will see another selection available called *MIX TYPE*. The choices here are *COMPARE*, *SELECT* and *SUBTRACT*.



Comparison mix mode:

This mode displays the result of the comparison between HIGH and LOW frequency echoes. If those echoes are overlapped at the same depth, the resultant levels are displayed in mixed levels. If the mixed fish school is partly displayed, it suggests the possibility of a larger fish school among the small fish school.

Subtraction mix mode:

This mode displays the resultant image by subtracting the HIGH frequency echoes from those of LOW frequency. Using this method, you can discern a fish school by size. For instance, if the resultant echoes are displayed in similar levels as the HIGH frequency echoes, this result suggests the majority of the fish species is sensitive to the HIGH frequency transmission, i.e. the detected fish school could be small fish like young sardine. If the resultant echoes are shown in different levels from the HIGH frequency transmission, it indicates the fish school is sensitive to LOW frequency, therefore a larger size of fish species.


Selection mix mode:

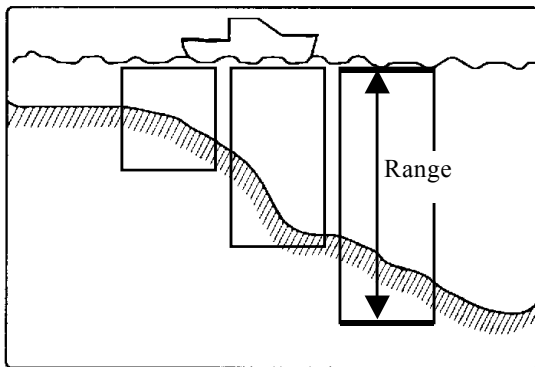
This method is similar to A mode in principle; however, the process in determining display level is different. If the HIGH frequency echo is predominant against those of LOW frequency, the resultant level is displayed in levels shown in HIGH frequency image. If the LOW frequency echoes are predominant against HIGH frequency in level presentation, no echoes will be shown. This indicates there are few schools of small fish.

- (8) At different vessel speeds the bottom will look different. The **FF Speed** slider controls how fast the FishFinder image travels across the screen. There are 9 levels that allow you to slow down the image when the vessel is going slow and speed it up when the vessel is going fast when you want a more consistent image. Also, on slower computers you may notice the video do JUMP like motion. This is because the computer isn't fast enough to keep up with the drawing of the video. If you slow the image down using this control you will get rid of the JUMPING caused by slower computers.
- (9) This controls the peak power output of the Black Box FishFinder. When checked (or low power mode) the output peak power is reduced from 1000 watts (un-checked) to 600 watts PEP. You should run low power when ever possible.
- (10) **Enhance.** This function enhances the picture presentation by changing the dynamic range of a sounder image in 5 steps, 25db, 35db, 45db, 55db and 65db. When the number is increased, the shades of level are widened causing better discrimination fish and plankton echoes. When the number is decreased, the shades of level are narrowed causing the seabed and fish echoes enhanced.
- (11) **Save/Recall Settings.** Click the *Save Settings* button to make a backup copy of ALL current settings of the P-Sea FishFinder. Should something happen that the P-Sea FishFinder isn't working like it should then you should be able to click the *Recall Settings* button to have it running just the way it was when then *Save Settings* was clicked.
- (12) **Mix Mode.** This control will only appears when the P-Sea FishFinder mode is set to *Mixed/Normal* mode. See #7 above for further discussion of this mode.










Pop-Up Buttons

The buttons shown here on the right will appear anytime you place the mouse arrow over the left-side of the FishFinder video screen. They control the most-often used FishFinder functions. They will remain there until you move the mouse arrow back away from it, then it disappears in a few seconds.

 (1),(2): These two buttons control the range of the FishFinder video screen as measured from top to bottom.



P-Sea Fish Finder® 2006 Version 7.00e


-  Left-click decreases range
Right-click, Auto-Range on ①
-  Left-click increases range
Right-click, Auto-Range on ②
-  Left-click decreases shift
Right-click, Auto-Shift on ③
-  Left-click increases shift
Right-click, Auto-Shift on ④
-  Left-click increases gains
Right-click, Auto-Gain on ⑤
-  Left-click decreases gains
Right-click, Auto-Gain on ⑥
-  Left-click increases STC Strength
Right-click increases STC Depth ⑦
-  Left-click decreases STC Strength
Right-click decreases STC Depth ⑧
-  Left-click changes from 50khz to 200
then split-Right click is nothing ⑨

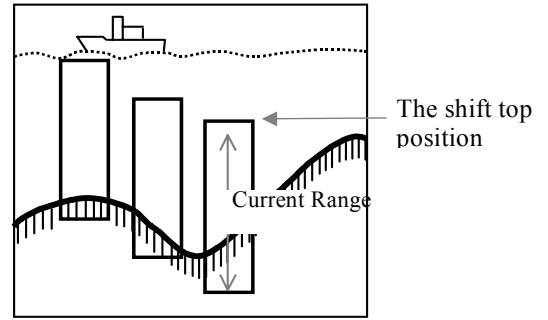
These pop-up buttons appears only when the mouse arrow is on the left-half of the P-Sea Fishfinder screen

Main Settings


Pulse STC Level STC Depth Gain F

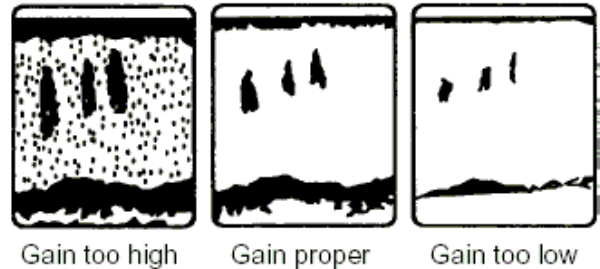
Clicking the top button to decrease the range the second button to increase or go deeper. Each time you click either of these buttons a box with the current ranges is briefly displayed in the middle of the screen. Holding down on these buttons will automatically keep changing the value. Right-click on either turns the Auto-Range on. Then any left-click turns the range mode back to manual.

 **(3),(4)**: These two buttons controls the **shift** or starting depth of the FishFinder video screen. Clicking #3 causes the shift to decrease and clicking #4 causes the shift range to increase. Right-click to set the Auto-Shift on. In this case just left-click either #3 or #4 to go back to manual-shift operation.




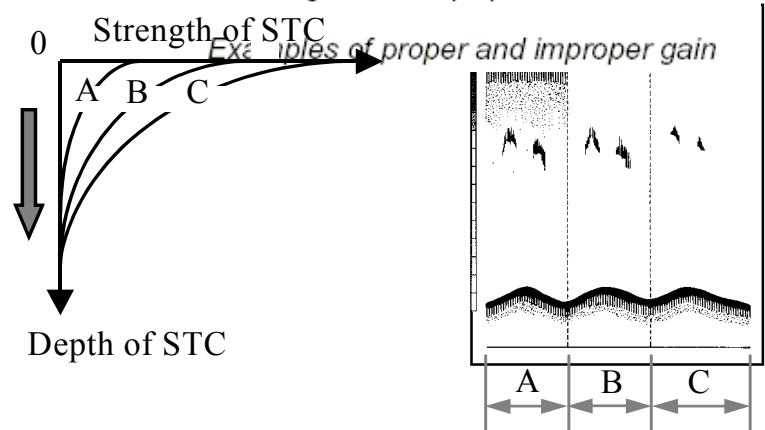
Use the shift to maintain a certain size of echo and yet still be able to work at any range.

 **(5),(6)**: These two buttons control the gain or sensitivity of the FishFinder. As seen to the right here, too much gain and you get noise and too little you may miss fish.




Right-click to set the gain to automatic and left-click to place back in manual mode.

 **(7)(8)**: These two buttons control the STC or time varied gain. It is used to get rid of the clutter near the surface as shown on the right here. Setting **A** there is not enough STC and setting **C** there is too much, fish may be lost in both so **B** would be the best setting.



Click the left mouse button to change the **Strength** or level of STC and click the right mouse button to change the **Depth** or length of the STC.

 **(9)**: Left-click this button to change the FishFinder modes from **LF** or low frequency to **HF** or high frequency 200khz or **Dual Frequency** modes. Clicking the button again repeats the cycle. Right clicking does nothing.

The Settings Control Tab

Selected tab is bolder **1**

Click to set TX pulse length **11**

Click to set STC strength and depth **10**

Click to change gain **9**

Click to set emphasis **8**

Number of soundings (or pixels) to save in the histogram **14**

Bottom Lock start of detection and detection threshold **13**

LF means Low Freq. and HF means High Freq. **2**

Click to set interference rejection **4**

Click to tune out colors **5**

Click to set background colors **6**

Sets transducer offset value **3**

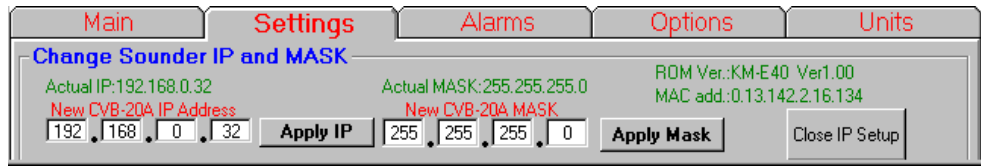
These are all for calibration of the various functions **7**

Change IP and MASK of CVB20A **12**

Tab	Control	Value
Main	Pulse	Short
	STC Level	50
Settings	STC Depth	50
	Gain	50
Alarms	Emphasis	50
	Pixel History	4000
Options	Speed	0
	Bot. Det.	Inside
Units	Bot. Det. Threshold	30
	Bot. Det. Threshold	50 khz
Main	IR 2	Color reject#0
	Color reject#0	White Black Blue DkBlu
Options	Draft	.0
	Depth	0
Options	Temp.	0
	Bot. Start	2
Units	Configure IP	

- (1) **Settings** tab is selected as shown above. Some not all items are shown here as there are more selections to the right. To see all selections you need to drag out the edges of the P-Sea FishFinder so that it widens until you see all of the options available.
- (2) **HF** stands for High Frequency which is 200khzs on this unit. **LF** stands for Low Frequency with is 50khz on this unit. All of the items to the right of the HF and LF changes different aspects of the image for that frequency.
- (3) **Draft**: Enter the estimated depth below surface that you figure your transducer is mounted at. **CAUTION**: The unit for the offset is the same as the current depth unit. Changing the depth unit will change the amount of offset applied. For example, set the offset for 2 when the depth units is feet and then change the depth unit to fathoms and now the transducer offset is at 2 fathoms or 12 feet.
- (4) **Interference Rejection** has a selection of *Off*, *IR1* or *IR2* where *IR2* is the highest level of rejection. In most all case *IR2* should be used.
- (5) **Color reject** tunes out colors starting with the weakest to strongest. There are 30 total colors but only 14 levels of rejection where 0 is no rejection and 14 leaves only one color, brown as the hardest object possible.
- (6) **Background Color** can be changed to white, black, light blue or dark blue just by clicking on the desired color here. The FishFinder image resets when the background color is changed.
- (7) **Depth, Speed & Temperature** offsets. Use these three drop-down boxes to calibrate the Depth, Speed or Temp. Simply click on the appropriate box and select the value that is needed to be add or subtracted from to get the proper reading.
- (8) **Emphasis** setting is between 0 and 99. It is suppose to exaggerate the tail of the bottom echo. Usually you should leave this at zero unless your looking for something light like plankton layers and thermal inclines.
- (9) **Gain** setting is between 0 and 99. Increases the sensitivity of the echo return as it is increased. Changing this when in *Auto Gain* mode turns the auto-gain off. When using bottom classification, the gain is being changed by the program so this value will change by itself in this mode. When bottom classification is on you can help the program to get to the proper gain settings by changing this value until the hardness light flashes green most of the time with just an occasional flash of yellow. The program will eventually get to the proper level but you can aid it by doing it yourself just be sure to give a few seconds between each change to give the program time to respond.
- (10) **STC Level/Depth** controls the STC strength and depth of effectiveness. STC is basically a time varied gain where the gain is attenuated to start with then the gain increases to normal a the depth setting. Increase the STC level to just clear up the clutter near the surface and make it as deep as needed to make a even speckle of noise on the screen. No noise at all usually means too much STC if the noise picks up the deeper you go.
- (11) **Pulse** length is the length of time that the 50 or 200 khz signal is on for each strike on the sounder image. It can usually be left to short, increase only when running deep modes. Choices are *Ultra Short*, *Short*, *Medium* and *Long*.

(12) **Configure IP** is used to change the IP and MASK address of the CVB20-A black box sounder. Click the *Configure IP* button on the *Settings* tab and the menu shown to the right here will appear. Normally you would never want to change this unless your using a network and they conflict with the way your computer's network is set up. The *Actual IP*, *MASK*, *ROM Version* and *MAC Address* are displayed in green. Just click and change the text in the white boxes to the new values and click the *Apply IP* or *Apply Mask* buttons to make the changes to the CVB20A black box sounder. Be sure to write the exact values you changed to because once the changes are made you have change your computer's network setting to compatible values or you will not be able to use CVB20A. You can change only the last set of numbers on the IP address without having to change your computer's IP settings otherwise you must set your compute's IP to be compatible.



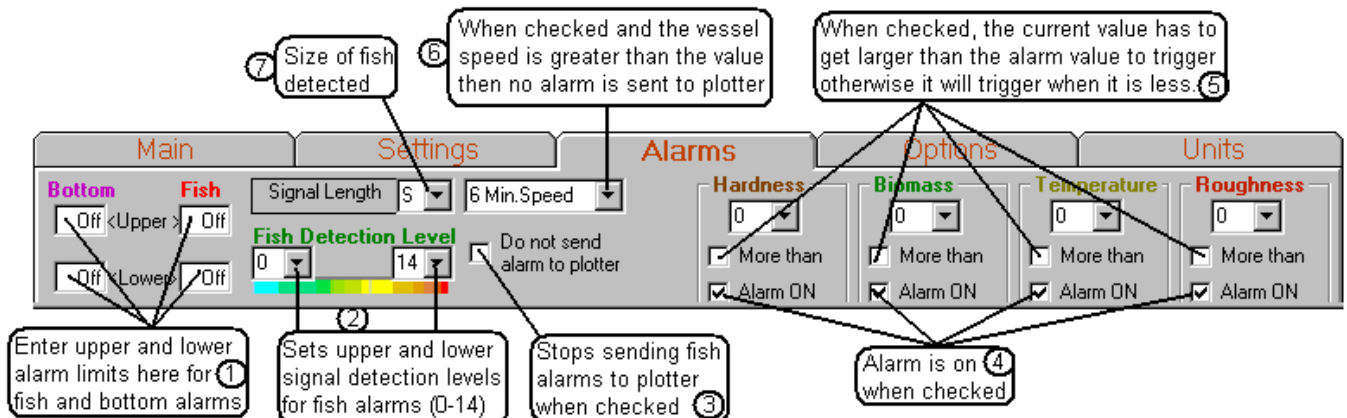
One exception is when you use a ROUTER and set your computer's IP to be obtained automatically. In this case you do not have to worry about setting neither computer or CVB20A. The router will do this for you.

(13) **Bot. Det. Threshold**, **Bot. Det. And Bot. Start** all help to define what is bottom from what is fish or clutter. The *Bot. Start* sets the place where P-Sea FishFinder starts to look for bottom. Anything less than this value is never considered to be bottom. Usually you want to set this so only the first few feet are ignored. The *Bot. Det. Threshold* have settings for both frequencies. Adjust this for most stable depth readings. The *Bot. Det.* choice of *Inside* or *Outside* looks for bottom that is only on screen when set for *Inside*, and it looks for bottom anywhere when set to *Outside*. The default is set for *Inside*.

(14) The **Pixel History** box allows you to increase the amount of the FishFinder image history is recorded. Each pixel is equivalent to one sounding or pulse. The default is 4000 pixels(soundings) but you can change this to just about any length if you like. Be careful though, changing this value too high can cause unusual operation like jerky screen or momentary freeze depending on the speed and RAM in your computer. When you increase this value, try increasing at 2000 to 4000 increments, running the FishFinder for an hour or so and see how it works. The memory resets when you hear a beep (if your computer is equipped with a internal speaker). If it works ok up to this point then it is ok to increase it some more IF need be.

The Alarms Control Tab

Click on the **Alarm** tab to set any of the P-Sea FishFinder alarms.

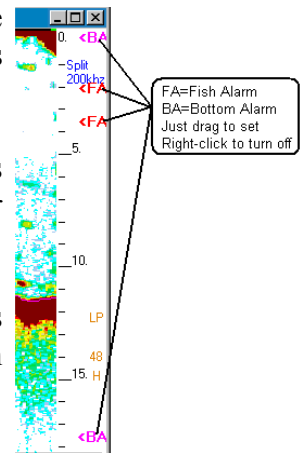


- (1) Enter upper and lower limits for either **fish alarm** using the current depth units. Any fish that are between the upper and lower limits and meet the *Detection Level* and *Signal Length* will sound the alarm. You must press the Enter key for the values to take

The **upper** setting for the **Bottom** alarm will cause the alarm to sound when the seabed depth gets shallower than the alarm set depth. So you always set this value less than your current depth.

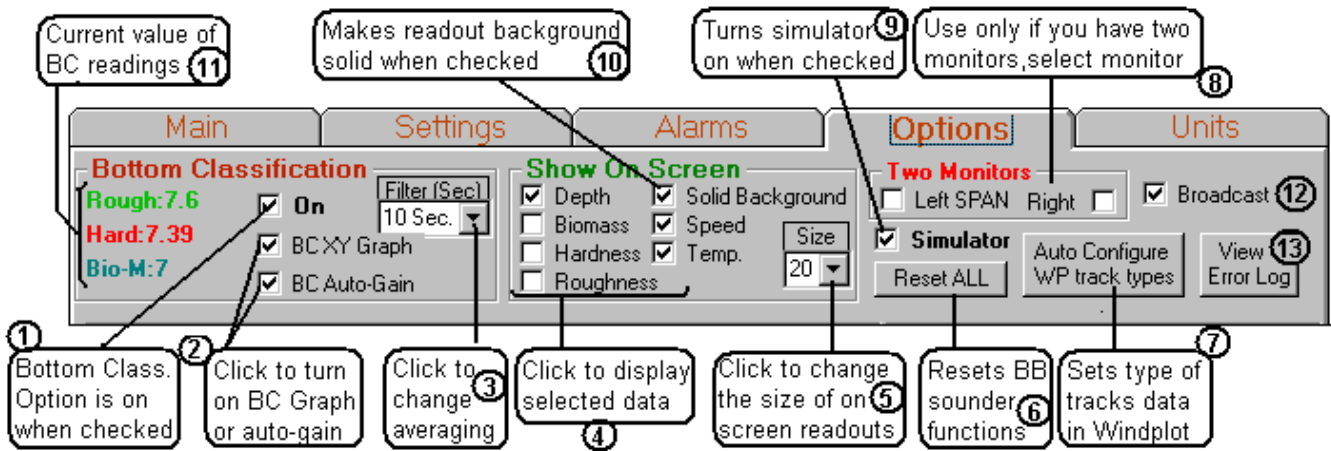
Setting the **lower Bottom** alarm will sound the alarm when the seabed goes deeper than the alarm set depth. So you always set this value to a value lower than the current depth.

The easiest and best way to set these alarms is from the FishFinder scales as shown here to the right. Simply place the mouse arrow on one of the <FA (Fish Alarm) or <BA (Bottom alarm) labels to set and right-click to turn off.



- (2) **Upper and lower fish detection level** settings allows you to tune out some of the colors that the fish might be. There is a color bar just under these controls that simulates the colors that will be turned out. When increase the lower limit you will see some of the colors disappear on the left of this color bar. When you decrease the upper limit, you will see some of the colors on the right disappear. This simulates what colors are being tuned out but is not necessarily the exact colors.
- (3) **Stop making fish marks on plotter screen** when vessel speed is less than this alarm value. When it is not checked, a green fish mark is made at the beginning of a fish school and a red one at the end. The end mark also has a numerical value printed next to it that represents the size of the school. Set the minimum speed so that no marks are made when your fishing, then there is no need to mark fish on the screen.
- (4) These check boxes turns the appropriate Hardness, Roughness or Temperature alarms on when checked. You must set the value of the alarm and check the check box **More Than** if you want the alarm to go when the actual value gets larger than the set alarm value
- (5) Check one of these **More than** check boxes to have the appropriate alarm to go when the actual value exceeds the alarm value.
- (6) **Do not send to plotter** stops making any marks on plotter screen when checked. When it isn't checked and the current vessels speed is greater that the **Min. Speed** then a green fish mark is made on the plotter screen at the start of a school of fish and a counter is started, when the school goes off the screen then a red mark is made and the total count is printed next to the red fish mark.
- (7) School of fish alarm signal length, 0 is long taking 20 soundings to activate alarm, 1 is medium - taking 12 soundings to activate the alarm and 2 is short taking only 4 samples to activate the alarm.

The Options Control Tab



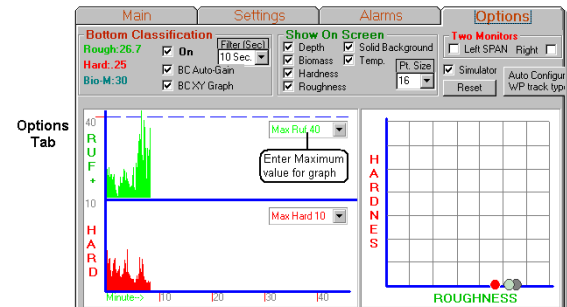
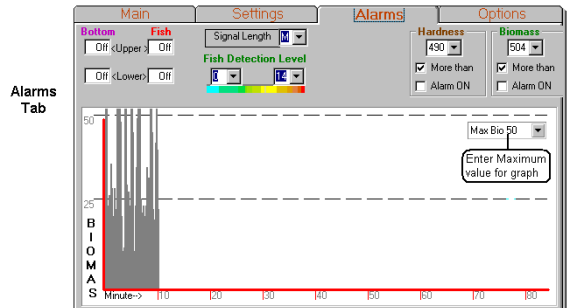
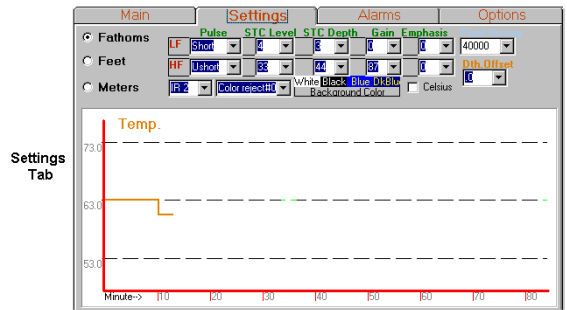
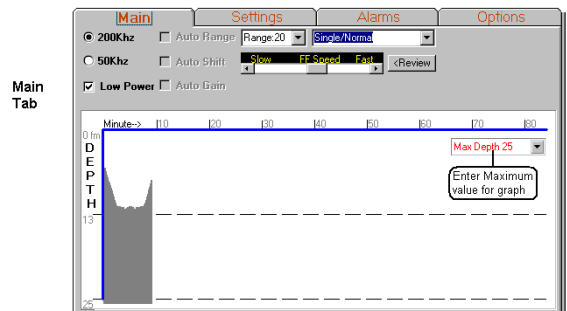
(1) **Bottom Classification** is turned on by clicking this check box. When checked, all of the automatic functions are dimmed as this option takes control of gain and depth. When it gets the depth and gain adjusted right, it displays two characteristics of the bottom, hardness and roughness. It also provides a third display of biomass or anything between the bottom and the surface.

In order for the BC function to work the 2nd echo must be able to be detected. This is because the Hardness is determined by the strength of these to each other. There is a green/yellow light (dot) just to the right of the **On**. This light is green when there is enough gain to be able to detect the 2nd echo and yellow when it isn't. The ideal setting is with just an occasional yellow showing now and then. You can use the **BC Auto-Gain** function to have the FishFinder set this automatically for you.

You may or may not see the second echo, it depends on the screen resolution of your display. The program requires at least 1024x768 and the 2nd echo will be under the TAB control with this resolution. Monitors with higher resolution will be able to see the 2nd echo.

When BC is turned on you will notice a graph displayed under the TAB control. Each tab will have a different graph as show here.

The second echo is used to calculate the hardness and roughness. The FishFinder send out a sonic sound wave that reflects off of the seabed floor and back to the transducer and that is how we display the bottom. The second echo is where this same sonic wave has bounced off of the surface to the seabed and back again. Because of this it should be noted that the sea surface conditions



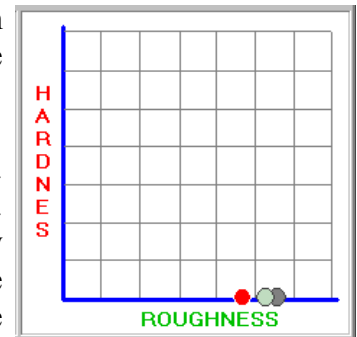
can make a difference on the outcome of the hardness and roughness readings. Other things such as depth, sounding rate (speed of screen) can alter readings. For this reason you should always use the same control settings and sea conditions when recording hardness and roughness for accuracy. But even in rough conditions you will still be able to tell when over rough or hard bottom.

Clicking on Histograms to jump to location on chart in P-Sea WindPlot

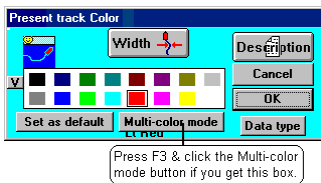
When you have the bottom characteristics turned on you get four different histograms as previously described. If you started the P-Sea FishFinder using P-Sea WindPlot you can click on any portion of the graphs to display the chart in the area where that portion of the graph was created. That is, if you click on any graph say that was done an hour ago causes the cursor on P-Sea WindPlot to be turned on and moved to time and location where that graph was created. Then you can just click the *GOTO* cursor info box and a waypoint is set for that point so that you can steer back to it. Click the histogram again to turn the cursor off again and resume your normal plotting.

- (2) **BC Auto-Gain** check box causes the gain to be adjusted by the program when checked, keeping the yellow light just flashing once and a while. The gain value is printed in the scale column when this is on.

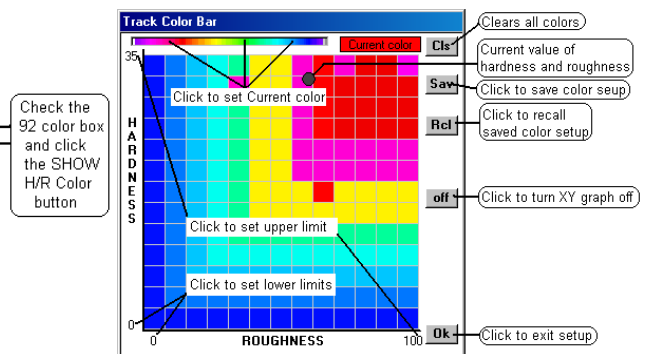
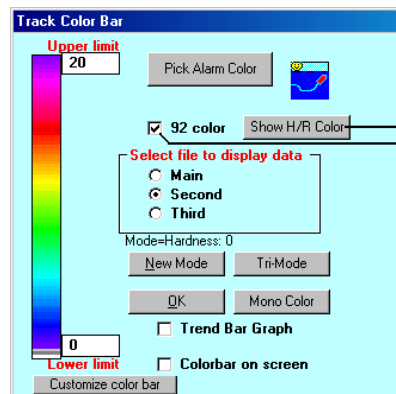
BC XY Graph check box will display a red dot on an XY grid as show here. This graph gives a quick view of the relation of the hardness to roughness. With experience, you will be able to tell what kind of bottom your currently going over just by where the red dot is at. A hard bottom with little roughness may be clay bottom where a real rough bottom with some hardness will most likely be rocky and a combo of both is most likely shell mounds.



When it is operating you will notice a trail of white to grey/black dots. These dots are showing the past trail of the graph so you can see the it's trend.




This graph is carried over to the P-Sea WindPlot II *Multi-Color* mode setup



Click the color bar to pick up a color, click a square to fill it with that color and right-click a square to pick up a color from any square. Be sure to add about having tide correct depth and speed shut off. Add that you can hold down the left mouse button over the squares to create a color path.

- (3) **Filter (Sec)** drop-down box allows you to select a filtering rate for the BC function. Without it the values jump wildly. The default 10sec. should be adequate for most conditions but if you find it jumping too much to your liking then increase it but be careful, too much and what your seeing on the screen will be way behind you.

- (4) **Show On Screen**, check these boxes to have the value show on the lower-left of the FishFinder image screen. These same values will appear on the plotter under the vessel's speed and heading so this allows you to turn them off of the FishFinder.
- (5) Click the **Pt.Size** down arrow to select the size of print for the readouts (4) above.
- (6) Click the **Reset** when the/if the FishFinder stops functioning or values seem wrong. It will reset all presets to factory settings and reset the Ethernet connection.
- (7) Click the **Auto-Configure WP track types** if you have not set the P-Sea WindPlot II tracks to store the recommended Depth, Hardness and Roughness. It makes the Depth the main track just incase you're going to use the track data to generate a 3D bottom (if or when you get the 3D option). Just click the button once, there is no need to click it more than once unless you reinstall or reset P-Sea WindPlot II. You should also switch the track colors to at least **Multi-Color** mode as only the Depth will be recorded in Mono-Color Track modes.

- (8) The **Two Monitor** option section is ONLY when you have two monitors connected to a computer that has two 15 pin video connectors connected to two monitors.  Before clicking the **Right** or **Left** check boxes, make sure the monitors are setup properly. You must be able to display a program maximized on only one monitor. In other words, if you open P-Sea WindPlot and it stretches clear across both monitors then your not setup right. Check your display properties, there should two monitors showing in the *Settings* part. If not then you're video monitor is not setup to display two monitors. Then click on monitor 2 and set it as the **attached** monitor. The you need to set it up so that it does not span clear across both monitors. We can not get into this as it is different for each video card. Check the instructions or just do trial and error until you get WindPlot to come up on only one screen.

When you get P-Sea WindPlot II to come up on just one of the two monitors then open up the FishFinder by clicking on the **Options** menu select **P-Sea FishFinder**. After the 30 second warmup for the FishFinder click on the **Options** tab on the FishFinder tab. If P-Sea WindPlot is showing on the left monitor then check the **Span Right** check box otherwise click the **Span Left** check box. The FishFinder should move to the blank screen. You can drag the edges of the FishFinder to make it fit the screen if you like. If you find the picture jumps too much then make the FishFinder screen smaller by dragging the edge back again. The reason it jumps is that the computer is not fast enough to keep up with refreshing the complete screen.

- (9) Click the **Simulator** box so that it is checked if you wish to run the FishFinder in the Simulator mode. In this mode you get a simulated image of some seabed somewhere without being in the water. In this mode you do not need a transducer connected either. Use it to play with the controls and options before going to the fishing grounds where you do not want to fish, and not have to learn how to use the FishFinder.
- (10) Click the **Solid Background** check box so that it is checked to have the data displays (4) background appear solid, without any of the sounder image behind them to clear up the readouts.
- (11) These readouts appear when you have the BC function turned on. They show the current value of Bottom Hardness, Roughness and Biomass.

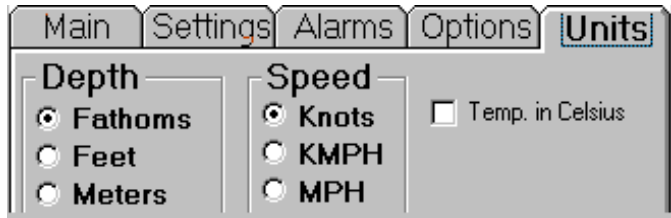
(12) **Broadcast** check box. This needs to be checked when connecting one CVB20A to multiple computers. It allows the CVB20A data to be shared.

(13) **View Error Log** button. Displays a list of errors if any are present.

The UNITS Tab

This tab allows you to change depth, speed and temperature units

Simply click to select the Depth or Speed units so the dot is in front of your selection.



Temperature units degrees C or Celsius is displayed when the *Temp. in Celsius* control is checked. Degrees F or Fahrenheit is displayed otherwise. The temperature is display down to the hundredth of a degree.

Operating the Bottom Characteristics Option

There are some things you need to be aware of first when operating the **Bottom Characteristics** (or BC as we if further refer to it) function of the P-Sea FishFinder. BC requires a good second echo, that is where the sound wave has bounced off the seabed, back to the boat, then back down again to the seabed as it bounces off the ocean surface and then back up again. The relative signal levels of the first and second echo is used to tell the hardness. It should be obvious then that the sea conditions will play a role in getting accurate determination of the BC harness and roughness values. Although bad sea conditions can cause loss in accuracy, you can still use it to tell what the bottom type is but any experienced user can do that from the FishFinders video picture. So, one should be concerned about keeping an accurate description in the track column of the current sea conditions for each track made with the BC function.

Speed issues

P-Sea FishFinder will cause some stress to a Pentium 4 computer but it should work fine. You can drag the edges of the sounder image to make it wider or narrower. More stress is put on the CPU as the image is widened. Faster pulse repetition rates will put more stress on the CPU. Slowing down the image with the image speed control in the *Main* tab will put less demand on the CPU. A jerky picture happens if the CPU can not keep up with the image data from the CVB20A.

Wiring Diagram

