

## CUSTOMIZE THE 2D SONAR VIEW

The settings in this section are optional. You can use the default settings for the 2D Sonar View, or you can customize it with your preferences. See **Views** for more information.

## OPEN THE 2D SONAR PREFERENCES MENU

The Preferences menu allows you to set the sonar mode, zoom mode, return palette, background color, bottom view, and RTS Window. For more information about view preferences, see **Views**.

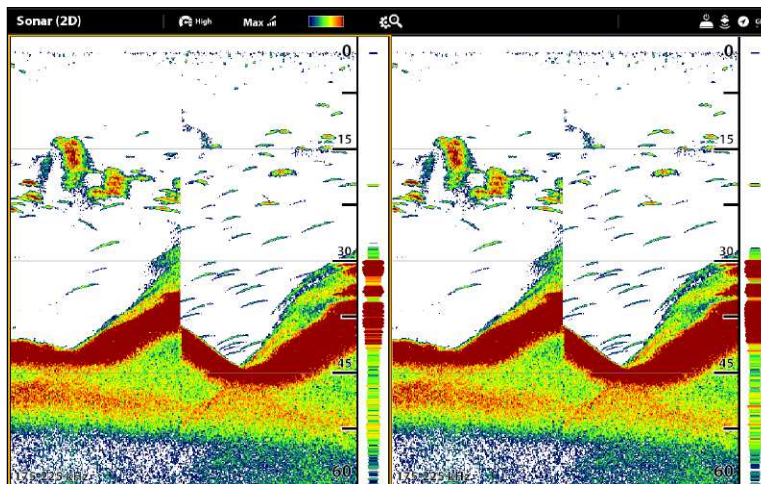
1. With a 2D Sonar View displayed on-screen, tap Sonar [2D] in the status bar, or press the MENU key once.
2. Select Sonar Options.
3. Select Preferences.

### Change the Sonar Mode

The 2D Sonar data can be displayed on the full screen. You can also choose a split screen to display the beams separately, or you can display a split zoom view.

1. From the Preferences menu, select Sonar Mode.
2. Select a mode to apply to the view.

**Split (Dual) Sonar Mode**



<b>Normal</b>	The 2D Sonar is displayed on the full screen.
<b>Split [Zoom]</b>	The view is split into two sides. 2D Sonar View is displayed on the right side with a zoom preview box. The zoomed view is shown on the left side. Select Split [Zoom] from the Preferences menu, and you can turn on Flat Bottom and change the Zoom Window size.
<b>Split [Dual]</b>	The view displays sonar returns from each down beam frequency on separate sides of the screen. You can use the split mode to make side by side comparisons between the sonar returns from both beams.

## Set the Zoom Mode

The Zoom Mode sets the zoom commands to magnify the full pane or the cursor selection. See *Use Cursor and Zoom in Sonar Views* to apply the zoom features.

1. From the Preferences menu, select Zoom Mode.
2. Select Pane Zoom or Cursor Zoom.

<b>Pane Zoom</b>	When you use pinch out/in [touch screen] to zoom, or press the +/- ZOOM keys, the view will be magnified.
<b>Cursor Zoom</b>	When you use pinch out/in [touch screen] to zoom, or press the +/- ZOOM keys, the cursor selection will be magnified.

## Change the Color Palette

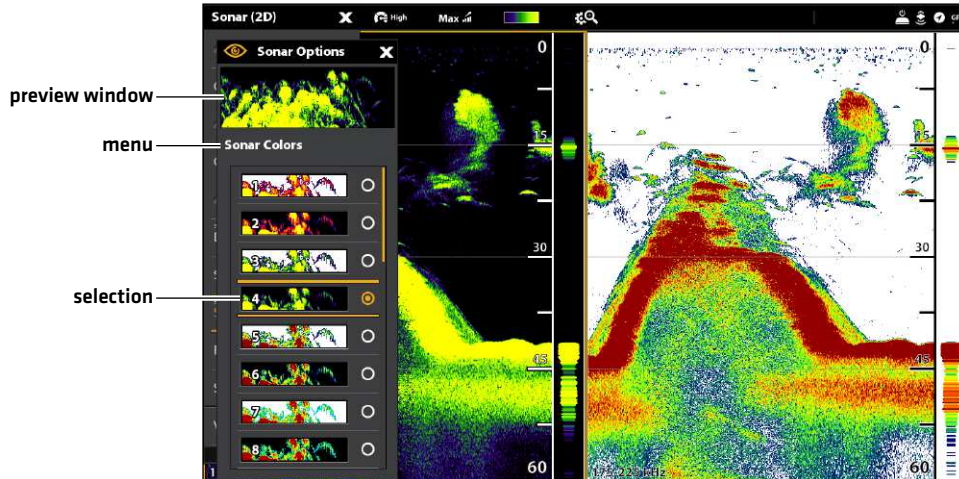
The Sonar Colors menu changes the colors used to display sonar returns on the view.

1. From the Preferences menu, select Sonar Colors.
2. Select a color palette.

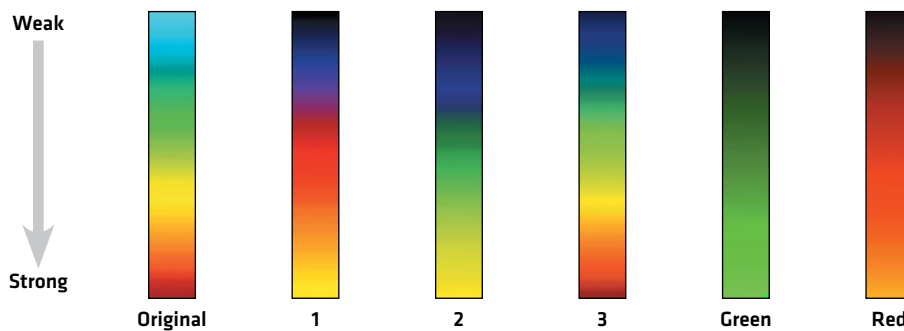


**QUICK TIP!** This setting can also be changed in the status bar menu

**Sonar View with a Customized Palette and Background**



**Palette Options**

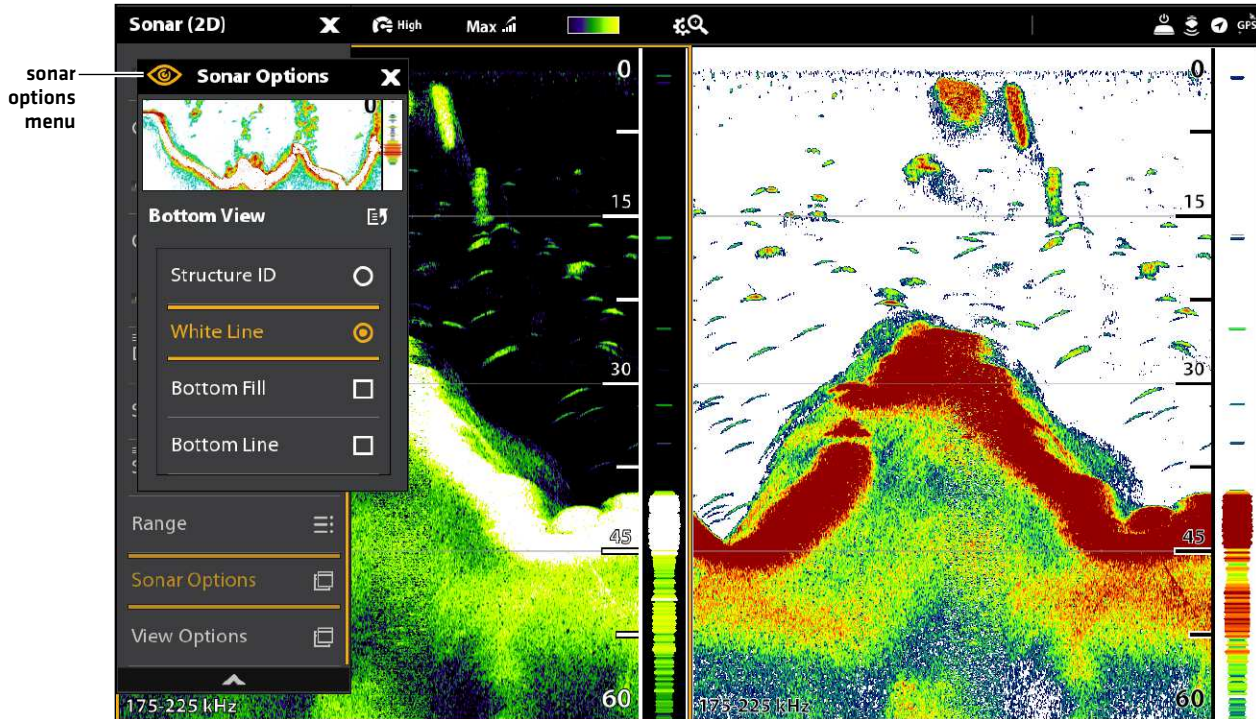


## Set the Bottom View Preferences

Bottom View selects the method used to represent bottom and structure on the display. There are many ways to display the bottom on the display.

1. From the Preferences menu, select Bottom View.
2. Select Structure ID or White Line. Then, select Bottom Fill and/or Bottom Line to add them to the view.

2D View with Bottom View Options Displayed



<p><b>Structure ID</b></p>	<p>Structure ID represents weak returns in blue and strong returns in red [original palette]. If the Palette is changed, the Structure ID will display the strongest return as specified by the palette.</p>
<p><b>White Line</b></p>	<p>White Line highlights the strongest sonar returns in white. This has the benefit of clearly defining the bottom on the display.</p>
<p><b>Bottom Fill</b></p>	<p>Select Bottom Fill to see the shaded bottom filled in with a solid color on the view. This has the benefit of clearly defining the bottom location on the display.</p>
<p><b>Bottom Line</b></p>	<p>Select Bottom Line to display the depth reading from the Depth Source as a line, either from the selected transducer or another digital depth source. See <b>Set up your Humminbird Network</b> for details about selecting sources.</p>

## Display the RTS Window

The RTS Window plots the depth and intensity of a sonar return. It updates at the fastest rate possible for depth conditions and shows only the returns from the bottom, structure, and fish that are within the transducer beam. When you use the cursor to review sonar history, the sonar history will pause, but the RTS Window will continue to display sonar returns in real time.

1. From the Preferences menu, select RTS Window.
2. Tap the on/off button, or press the ENTER key, to turn it on. Then, choose the type of RTS Window to display.

<b>Color (A-Scope)</b>	Sonar returns are displayed in color. The size of the displayed lines correspond with the intensity of the sonar returns from the transducer beam[s].
<b>Color (Full)</b>	Sonar returns are displayed in color, and they fill the width of the RTS Window.
<b>Mono</b>	Sonar returns are displayed in black.

## Turn on/off Fish ID+

Fish ID+ uses advanced signal processing to interpret sonar returns. When Fish ID+ is selected, fish symbols will be displayed on the Sonar View when very selective requirements are met.

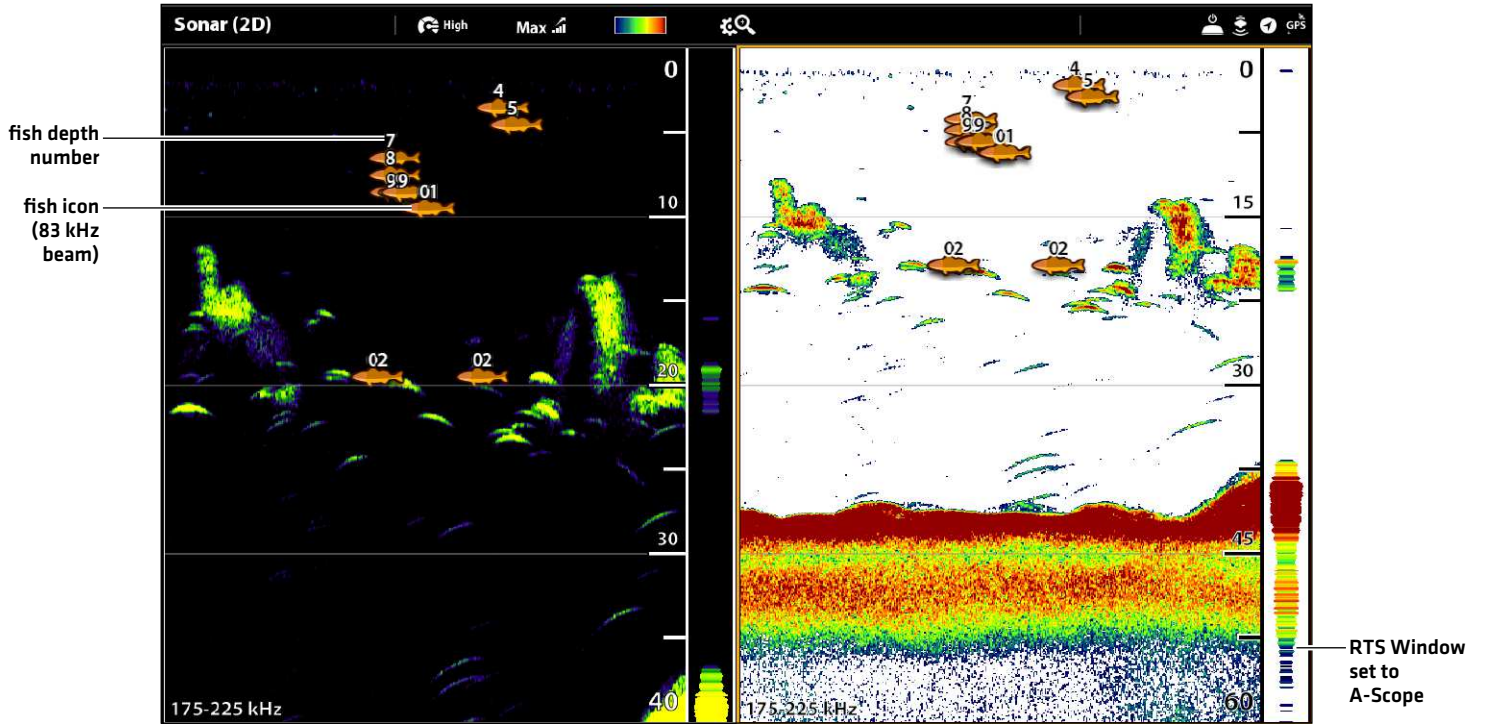
When Fish ID+ is not selected, the control head shows only the raw sonar returns on the display. The returns appear as arches on the display to indicate potential targets.

1. From the Preferences menu, select Fish ID+.
2. Use the following menu options to display fish icons, adjust the sensitivity, and more.

<b>Fish Icons</b>	Select Fish Icons to display fish symbols on the 2D Sonar View when a fish is detected. Blue Fish Icons = targets detected in the 200 kHz narrow beam. Orange Fish Icons = targets detected in the 83 kHz or 50 kHz wide beam.
<b>Fish Depth</b>	The depth of the fish is displayed above the fish icon.
<b>ID Sensitivity</b>	Use ID Sensitivity to adjust the threshold used for detecting a fish with Fish ID+. (1 = low sensitivity, where only a large fish will be displayed, and 10 = high sensitivity, where small fish up to large fish will be displayed)
<b>Fish Alerts</b>	To receive an on-screen alert when a fish is detected, turn on this menu option.



2D Sonar View (Split Dual Mode) with RTS Window and Fish ID+ Turned On



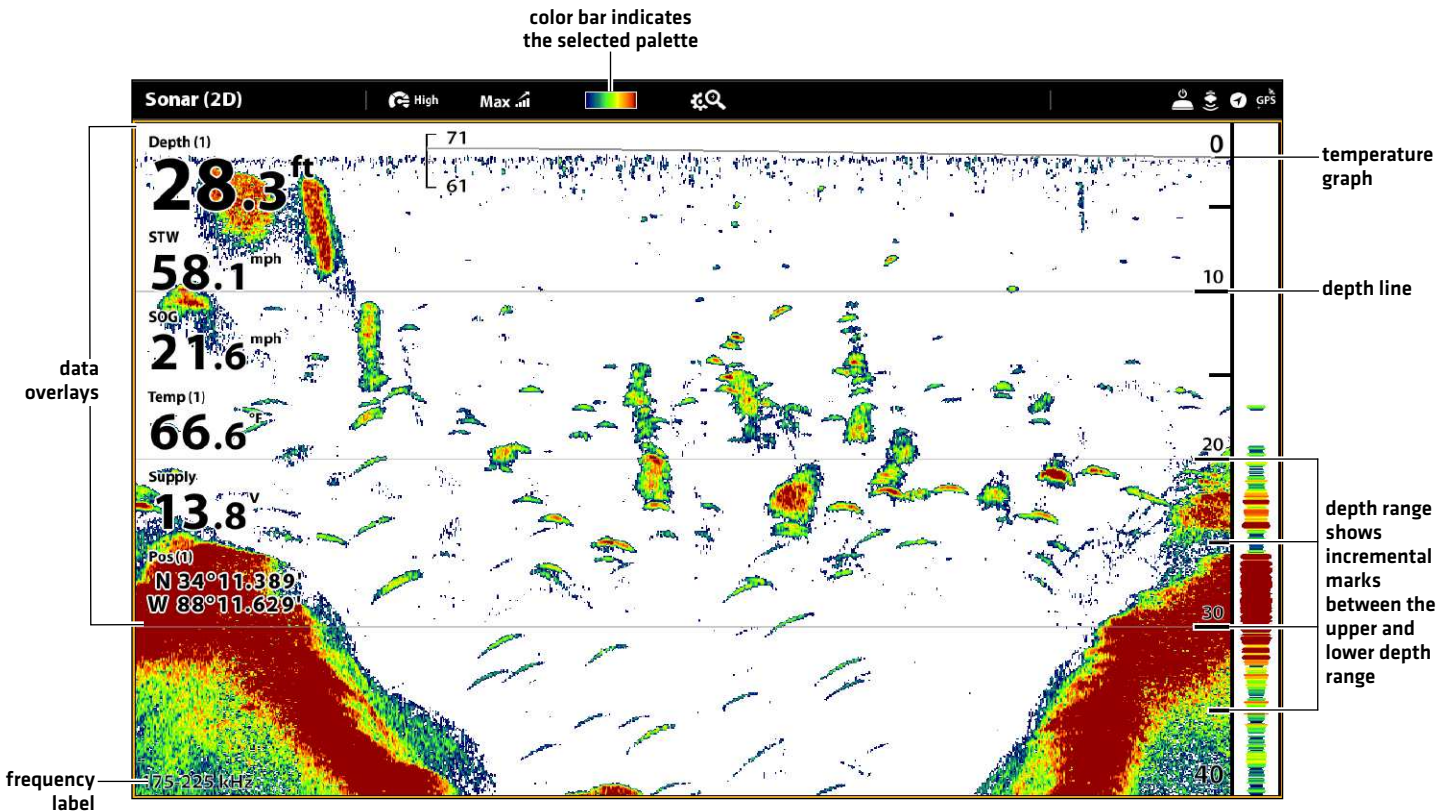
# CHANGE THE 2D SONAR VIEW OVERLAYS

Use the Overlays menu to display or hide information on the view. In the 2D Sonar View, you can display the following: depth lines, depth range, a color bar for the selected palette, temperature graph, beam frequency label, and data overlays.

Digital readout data can be displayed as an overlay, and it can be displayed in the data bar. To turn on the data overlay or data bar, see **Views: Edit the On-Screen View**. For more information about data overlays, see **Views**.

1. With a 2D Sonar View displayed on-screen, tap Sonar [2D] in the status bar, or press the MENU key once.
2. Select Sonar Options.
3. Select Overlays.
4. Tap the menu, or use the Joystick to select an item, and add a check mark. [check mark = visible, blank = hidden].

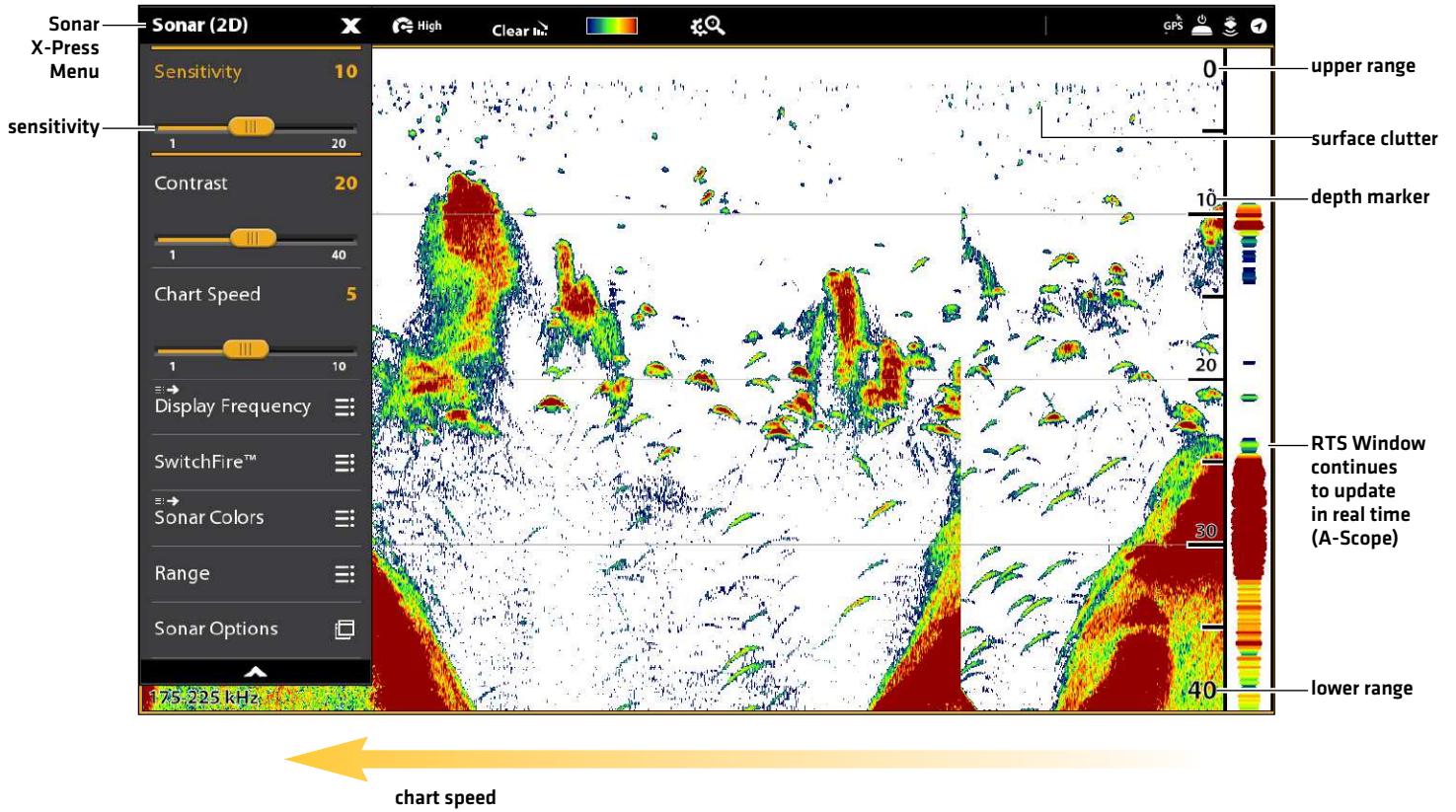
## Selecting Overlays for the 2D Sonar View



# ADJUST 2D SONAR DISPLAY SETTINGS


The X-Press Menu provides menu options to adjust the sensitivity and range as you fish. You can also mark a particular depth and control how fast the sonar history scrolls across the screen. The menu options allow you to see more or less of the sonar returns from the transducer beams as you adjust each setting.

Adjusting Sonar Display Settings



## Adjust Display Settings

1. With a 2D Sonar View displayed on-screen, tap Sonar [2D] in the status bar, or press the MENU key once.
2. Select Sensitivity, Contrast, or Chart Speed.
3. Press and hold the slider, or turn the Rotary dial, to adjust the setting.

<b>Sensitivity</b>	Sensitivity controls how much detail is shown on the display and will adjust the sensitivity of all sonar frequencies. <b>Decrease the sensitivity</b> to eliminate the clutter from the display that is sometimes present in murky or muddy water. When operating in very clear water or greater depths, <b>increase the sensitivity</b> to see weaker returns that may be of interest.  <b>QUICK TIP!</b> This setting can also be changed by turning the Rotary dial.
<b>Contrast</b>	Contrast allows you to choose a range of the Sonar Colors palette to display sonar returns. When Contrast is set to 20 (default), the entire Sonar Colors palette (represented by the Color Bar) is used to display weak and strong sonar returns. As you increase the Contrast, the top range of the Color Bar is used to display all sonar returns (whether weak or strong). As you decrease the Contrast, the bottom range of the Color Bar is used to display all sonar returns (whether weak or strong).
<b>Chart Speed</b>	Chart Speed determines how fast the sonar history moves across the display and how much detail is shown. Select a faster speed to see more detail. Select a slower speed to keep the sonar history on the display longer.

## Filter Surface Clutter

Use Surface Clutter to reduce the noise that may appear at the top of the view caused by algae and aeration. The lower the setting, the less surface clutter will be displayed. A higher setting allows more surface clutter to be displayed.

1. With a 2D Sonar View displayed on-screen, tap Sonar [2D] in the status bar, or press the MENU key once.
2. Select Sonar Options > Surface Clutter.
3. Press and hold the slider, or turn the Rotary dial, to adjust the setting.



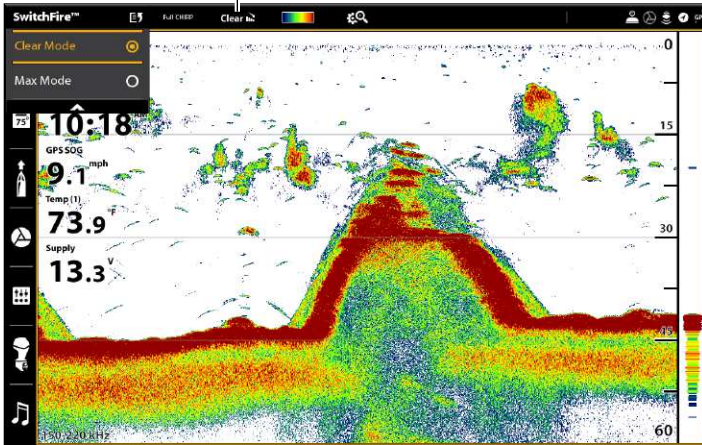
## Change the SwitchFire Mode

SwitchFire controls how the sonar returns are displayed in the view.

1. With a 2D Sonar View displayed on-screen, tap Sonar [2D] in the status bar, or press the MENU key once.
2. Select SwitchFire.
3. Select Clear Mode or Max Mode.

### SwitchFire: Clear Mode

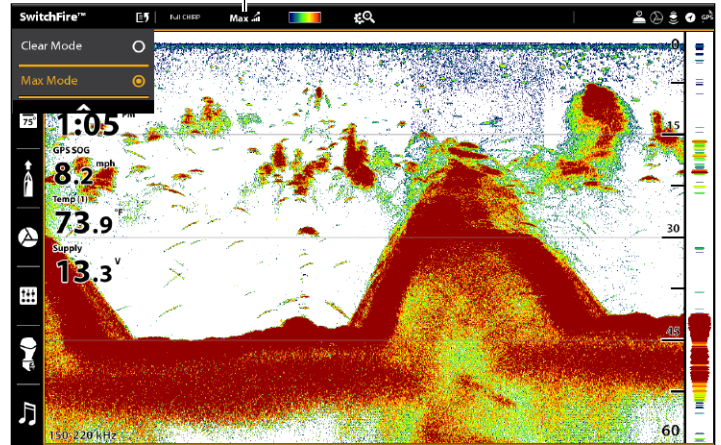
Tap to open the SwitchFire menu in the status bar.



Choose Clear Mode to see less clutter and more fish size accuracy on the display. When Clear Mode is selected, the clutter is filtered, and sonar returns are interpreted to provide more details about the objects within the transducer beam, regardless of their location. In other words, a large arch on the display means a large fish has been detected.

### SwitchFire: Max Mode

Tap to open the SwitchFire menu in the status bar.



Choose Max Mode to see only raw sonar returns on the display. When Max Mode is selected, you will see the maximum sonar information available within the transducer beam, so more fish arches and better jig tracking are shown.



**QUICK TIP!** This setting can also be changed in the status bar menu. See the illustrations above.

## Set the Range

Range controls how much of the water column is displayed on the view. For example, if you are only interested in the area between 20 and 50 feet deep, set the Upper Range to 20 and the Lower Range to 50. The view will not display sonar returns outside of the set ranges, and greater detail for the selected range will be displayed.

1. With a 2D Sonar View displayed on-screen, tap Sonar [2D] in the status bar, or press the MENU key once.
2. Select Range.
3. Select Upper Range. Press and hold the slider, or press and hold the ENTER key, to adjust the setting.
4. Select Lower Range.

**Auto:** Move the slider to Auto. The Lower Range will be adjusted by the control head to follow the bottom automatically.

**Man [Manual]:** Move the slider to Manual and adjust the setting.



## Display the Depth Marker

To mark a specific depth on the view, turn on Depth Marker. This menu is available in Custom Mode [see *The Menu System: Change the User Mode*].

1. With a 2D Sonar View displayed on-screen, tap Sonar [2D] in the status bar, or press the MENU key once.
2. Select Sonar Options.
3. Select Depth Marker.
4. Tap the on/off button, or press the ENTER key, to turn it on.
5. Press and hold the slider, or press and hold the ENTER key, to adjust the setting.

## Select Frequencies

If there are multiple beams available in a transducer, you can display individual frequencies on the 2D Sonar View. The menu options are determined by the installed transducer and control head model. See *Installation Information: Set up your Humminbird Network, Select Sonar Sources* and *Set up or Change Transducer Settings* for details.

## Dual Beam CHIRP Models

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1. With a 2D Sonar View displayed on-screen, tap the frequency menu in the status bar.

OR

Press the MENU key. Select Sonar Options > Preferences > Display Frequency.

2. Select a frequency from the list.



**NOTE:** If the control head is using a sonar source with only one beam frequency, the frequency list will not offer additional options.



**QUICK TIP!** This setting can also be changed by pressing and holding the ENTER key.

## Dual Spectrum High Wide Models

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1. With a 2D Sonar View displayed on-screen, tap the display spectrum menu in the status bar.

OR

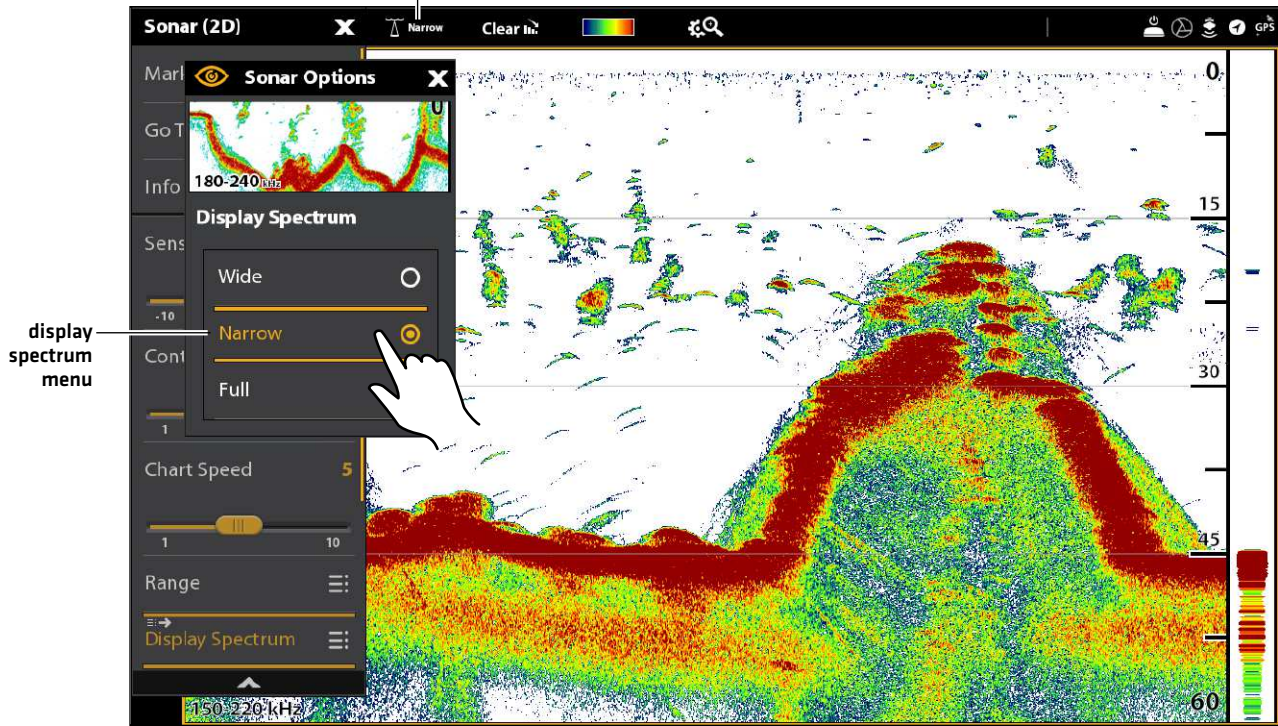
Press the MENU key. Select Display Spectrum.

2. Select a spectrum from the list.

<b>Full</b>	Select Full Beam [default] to use the complete frequency range.
<b>Narrow</b>	Select Narrow Beam for increased bottom detail and better target separation.
<b>Wide</b>	Select Wide Beam to maximize coverage and show big, clearly defined fish arches.

## 2D Sonar View

Tap to open the Display Spectrum menu in the status bar.



Tap to Select

OR



Press and Hold  
to Change the Setting

## Adjust Beam Sensitivity

Your control head model may allow you to adjust the sensitivity of individual frequencies. The available frequencies are determined by your control head model and the installed transducer. Use the following instructions to adjust a single beam.

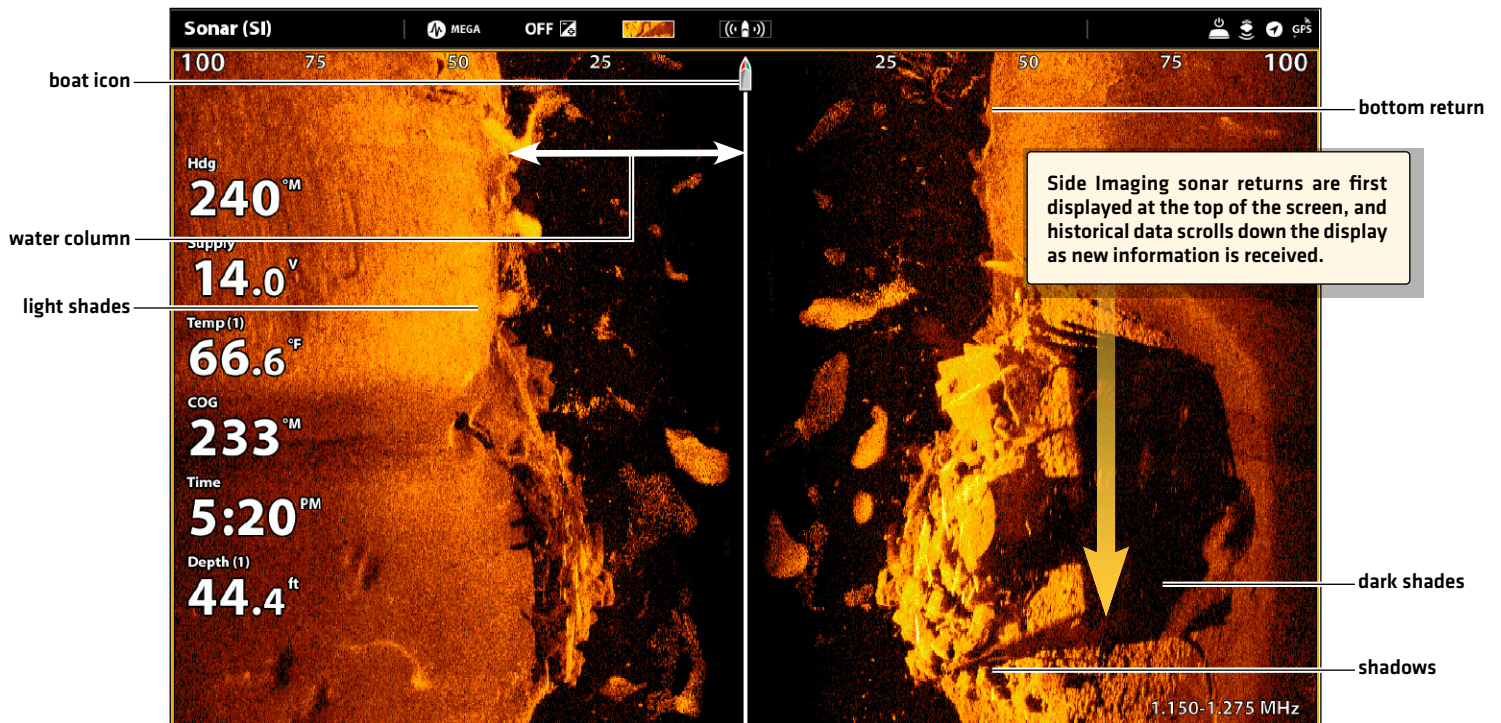
1. With a 2D Sonar View displayed on-screen, tap Sonar [2D] in the status bar, or press the MENU key once.
2. Select Sonar Options.
3. Select Medium or High Sensitivity Offset.
4. Press and hold the slider, or turn the Rotary dial, to adjust the setting.

# SIDE IMAGING OVERVIEW

(SIDE IMAGING TRANSDUCER REQUIRED)

Side Imaging beams “illuminate” the bottom contour, structure, and fish. The side beam coverage is very thin from front to back, yet very wide from top to bottom. The bottom composition determines the intensity of the sonar return, and upward slopes that face the transducer reflect sonar better than downward slopes that face away from the transducer.

Side Imaging View



Use the light and dark parts of the display to interpret the objects on the view as follows:

**Shadows:** The longer the shadow, the taller the object. Fish also cast shadows, and their distance from the bottom can be interpreted by their shadow.

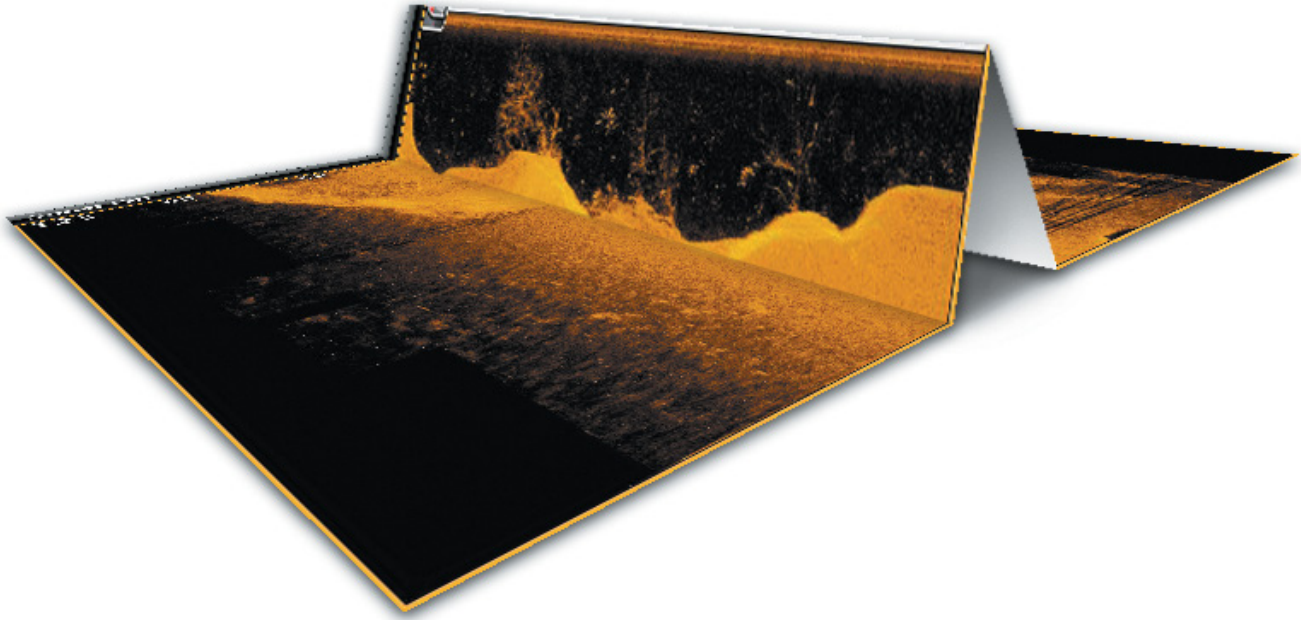
**Light Shades** represent denser terrain [possibly compacted sediment, timber, rocks] or rising terrain.

**Water Column:** shows the relative depth of the water under the vessel at any given time. Variations in the width of the water column show variations in the distance to the bottom as the vessel passes over. See the illustration *Interpreting the Side Imaging View*.

**White Streaks** or **Clouds** may represent fish on the display.

**Dark Shades** represent soft returns [possibly sand or mud] or descending terrain.

## Interpreting the Side Imaging View



To visualize how Side Imaging works, the Side Imaging View illustration can be folded down the middle and then folded again at the lowest point of the water column. The raised area reveals the water column with its relative depth of the water under the vessel. In the Side Imaging View, variations in the width of the water column show variations in the distance to the bottom as the vessel passes over.

### For Best Side Imaging Performance

- Vessel Speed: 2 to 6 mph
- Straight line navigation
- Minimum turning time and wave turbulence

Also, see [humminbird.com](http://humminbird.com) for tutorials and Side Imaging videos.



## CUSTOMIZE THE SIDE IMAGING VIEW

The settings in this section are optional. You can use the default settings for the view, or you can customize it with your preferences. See **Views** for more information.

### OPEN THE SIDE IMAGING PREFERENCES MENU

The Preferences menu allows you to select a beam to display, set the zoom mode, return palette, and turn on Contour Mode and SI Navigation. For more information about view preferences, see **Views**.

1. With a Side Imaging View displayed on-screen, tap Sonar [SI] in the status bar, or press the MENU key once.
2. Select Sonar Options.
3. Select Preferences.

### Select Beams to Display

The Side Imaging View displays both beams on the view. You can also choose to display the left side or the right side of the Side Imaging transducer beams.

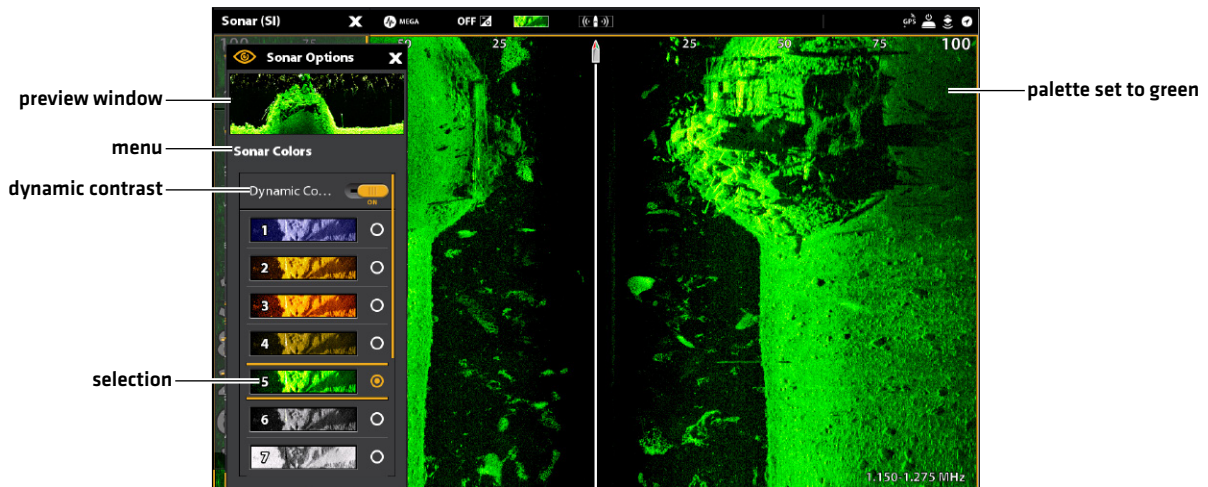
1. From the Preferences menu, select SI Side.
2. Select a side to display.

### Change the Color Palette

The Sonar Colors menu changes the colors used to display sonar returns on the view.

1. From the Preferences menu, select Sonar Colors.
2. Select a color palette.

Side Imaging View with a Customized Palette



**QUICK TIP!** This setting can also be changed in the status bar menu.

### Turn on/off Dynamic Contrast

Dynamic Contrast automatically enhances the contrast of the selected color palette.

1. From the Preferences menu, select Sonar Colors.
2. Under Dynamic Contrast, tap the on/off button, or press the ENTER key, to turn it on/off.



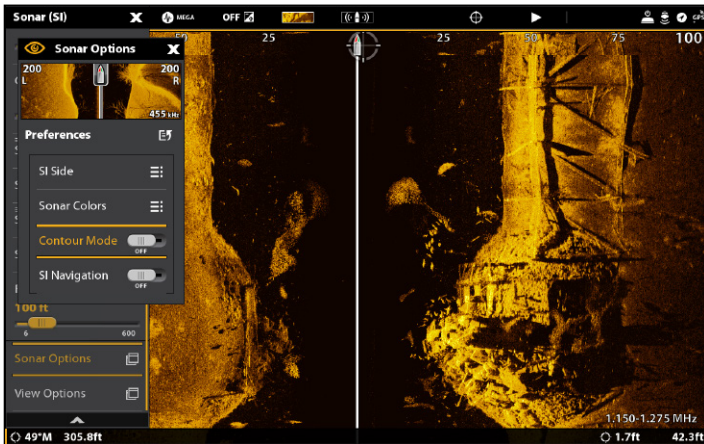
## Turn on/off Contour Mode

Contour Mode controls how the water column is displayed in the Side Imaging Views. When Contour Mode turned off, the water column is displayed on the view. The location of a target on the display is based on the slant range to the target.

When Contour Mode is turned on, the bottom is graphed at a constant point on the display, regardless of changes in depth. The Side Imaging beams are divided by a vertical line. The water column is removed from the view, which allows the display to show targets at their linear horizontal distance. The location of a target may be easier to interpret when the water column is removed.

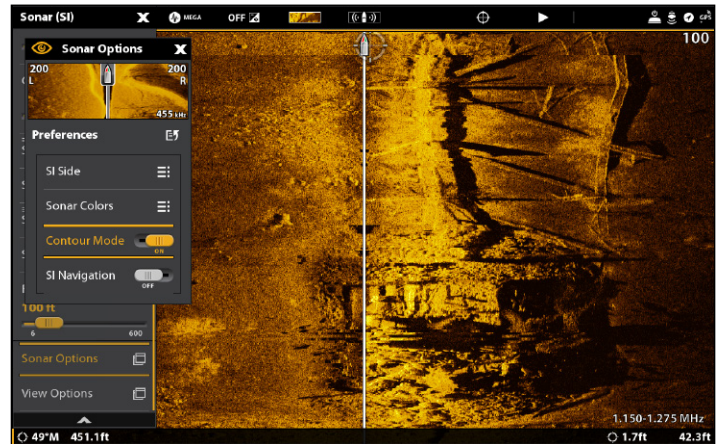
1. From the Preferences menu, select Contour Mode.
2. Tap the on/off button, or press the ENTER key, to turn it on/off.

**Contour Mode Off**



The water column is displayed on the Side Imaging View.

**Contour Mode On**



The water column is removed from the Side Imaging View.

## Turn on/off SI Navigation

SI Navigation controls how the boat icon is displayed in Side Imaging Views. See *Navigation in Sonar Views* for more information. If SI Navigation is turned on, the boat icon indicates the direction the boat needs to turn to reach the next waypoint during navigation.

If SI Navigation is turned Off, the boat icon will not change during navigation although you can still mark waypoints and start navigation from a Side Imaging View.

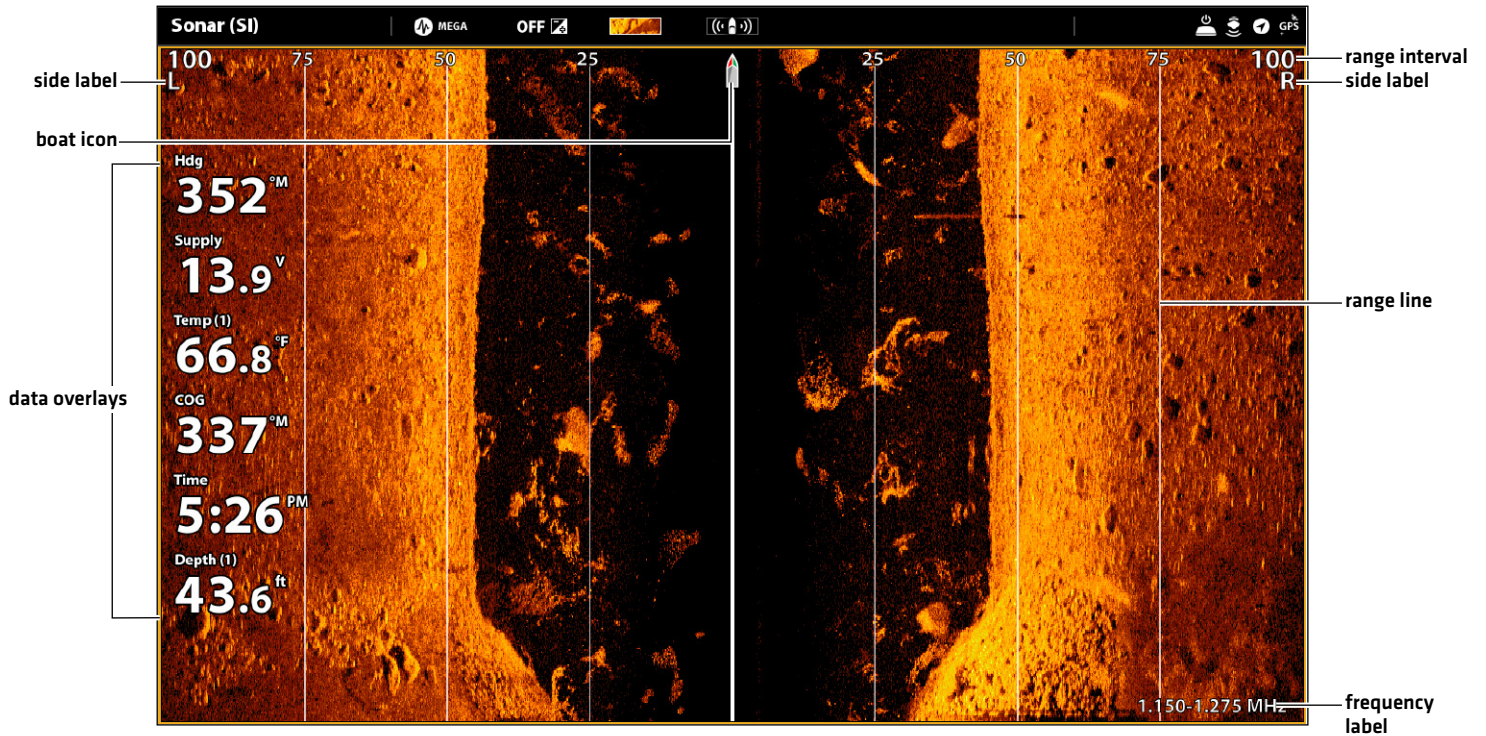
1. From the Preferences menu, select SI Navigation.
2. Tap the on/off button, or press the ENTER key, to turn it on/off.

## CHANGE THE SIDE IMAGING VIEW OVERLAYS

Use the Overlays menu to display or hide information on the view. In the Side Imaging View, you can display the following: boat icon, range lines, range intervals, side label, frequency label, and data overlays. To turn on the data overlay or data bar, see **Views: Edit the On-Screen View**. For more information about data overlays, see **Views**.

1. With a Side Imaging View displayed on-screen, tap Sonar [SI] in the status bar, or press the MENU key once.
2. Select Sonar Options.
3. Select Overlays.
4. Tap the menu, or use the Joystick to select an item, and add a check mark. [check mark = visible, blank = hidden].

### Selecting Overlays for the Side Imaging View



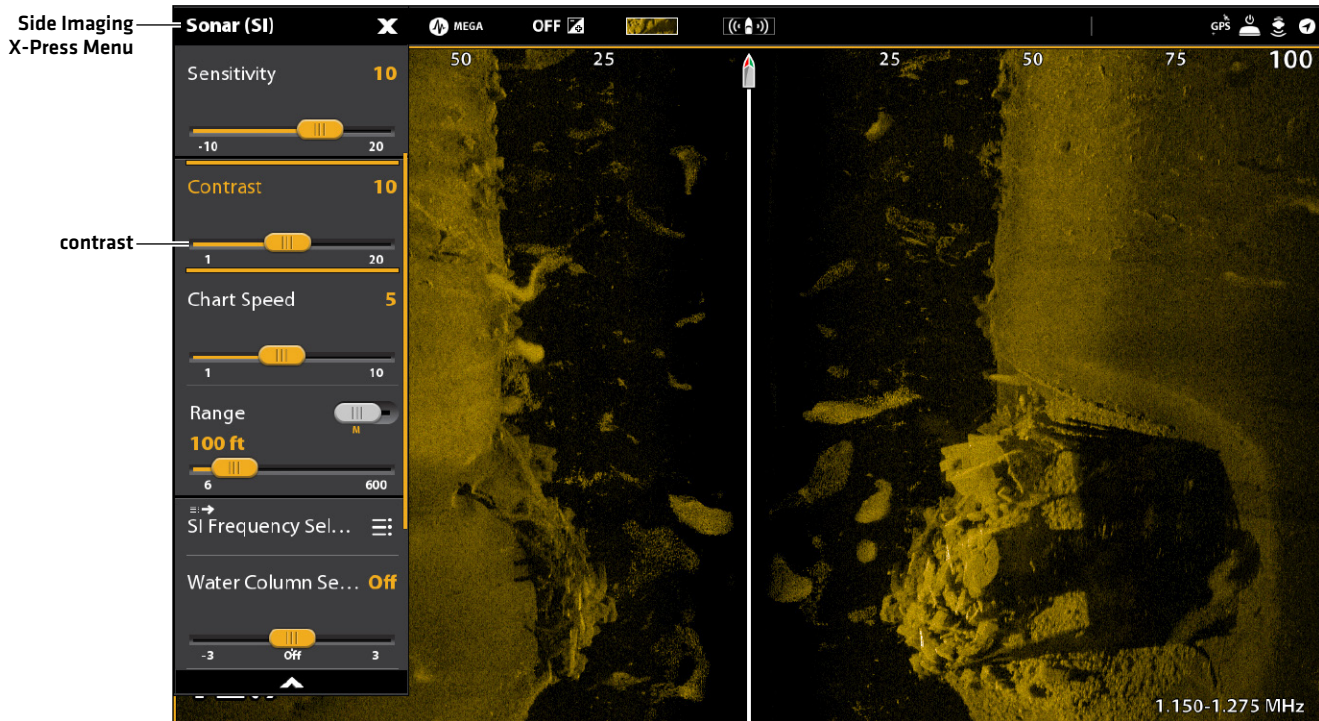
# ADJUST SIDE IMAGING DISPLAY SETTINGS

The X-Press Menu provides menu options to adjust the sensitivity, contrast, sharpness, water column sensitivity, and range as you fish. You can also mark a particular range, and you can control how fast the sonar history scrolls across the screen. The menu options allow you to see more or less of the sonar returns from the transducer beams as you adjust each setting.



## Adjust Display Settings

1. With a Side Imaging View displayed on-screen, tap Sonar [SI] in the status bar, or press the MENU key once.
2. Select Sensitivity, Contrast, Chart Speed, Water Column Sensitivity, or Sharpness.
3. Press and hold the slider, or turn the Rotary dial, to adjust the setting.

### Adjusting Side Imaging Display Settings





Sensitivity	<p>Sensitivity controls how much detail is shown on the display and will adjust the sensitivity of all sonar frequencies. <b>Decrease the sensitivity</b> to eliminate the clutter from the display that is sometimes present in murky or muddy water. When operating in very clear water or greater depths, <b>increase the sensitivity</b> to see weaker returns that may be of interest.</p> <p> <b>QUICK TIP!</b> This setting can also be changed by turning the Rotary dial.</p>
Contrast	<p>Adjust the Contrast setting to accent the light and dark parts of the Side Imaging data to provide greater definition.</p>
Chart Speed	<p>Chart Speed determines how fast the sonar history moves down the display and how much detail is shown. Select a faster speed to see more detail. Select a slower speed to keep the sonar history on the display longer.</p>
Water Column Sensitivity	<p>Adjust the setting to increase or decrease the sensitivity of the sonar return that is in the water column.</p> <p> <b>QUICK TIP!</b> This setting can also be changed in the status bar.</p>
Sharpness	<p>Turn on Sharpness and select a filter level to sharpen the edges of the Side Imaging data.</p>

## Set the Range

Range controls how much of the water column is displayed on the view.

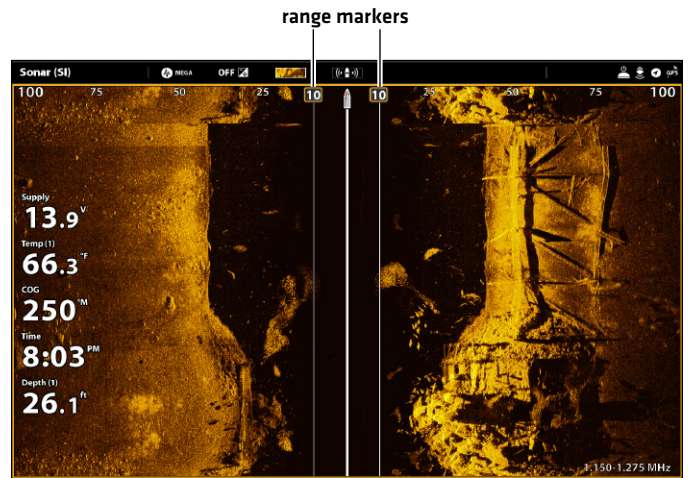
1. With a Side Imaging View displayed on-screen, tap Sonar [SI] in the status bar, or press the MENU key once.
2. Select Range.
3. Tap the slider to select Auto or Man [Manual], or press the ENTER key.

Auto	<p>The Range will be adjusted by the control head to follow the bottom automatically.</p>
Man [Manual]	<p>To adjust the display range, press and hold the slider, or press and hold the ENTER key. Select a low range number to focus on a shorter distance of the water column and see greater detail on the screen. Select a higher range number to view farther into the water and see an overview of details on the screen.</p>

## Display Range Markers

To mark a specific range on the view, turn on Range Marker. This menu is available in Custom Mode [see [The Menu System: Change the User Mode](#)].

1. With a Side Imaging View displayed on-screen, tap Sonar [SI] in the status bar, or press the MENU key once.
2. Select Sonar Options > Range Marker.
3. Select Left Marker or Right Marker.
4. Tap the on/off button, or press the ENTER key, to turn it on.
5. Press and hold the slider, or press and hold the ENTER key, to adjust the setting.



## Select Frequencies

If there are multiple beams available in a transducer, you can display individual frequencies on the view. See [Installation Information: Set up your Humminbird Network](#), [Select Sonar Sources](#) and [Set up or Change Transducer Settings](#) for details.

1. With a Side Imaging View displayed on-screen, tap the frequency menu in the status bar.

OR

Press the MENU key. Select SI Frequency Select.

2. Select a frequency from the list.



**NOTE:** If the control head is using a sonar source with only one beam frequency, the frequency list will not offer additional options.



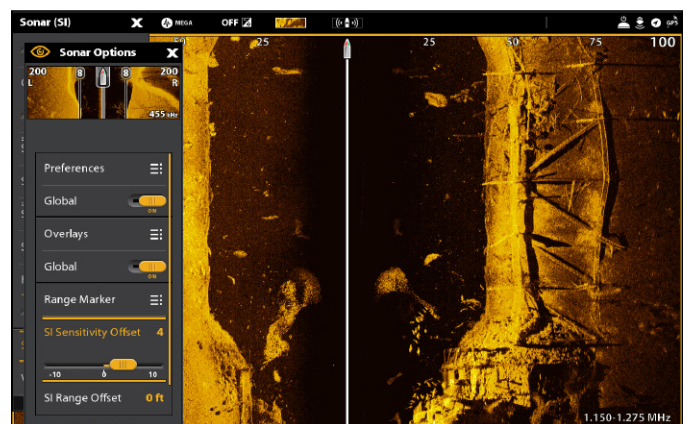
**QUICK TIP!** This setting can also be changed by pressing and holding the ENTER key.

## Adjust the SI Sensitivity Offset

In the unlikely event that your Side Imaging transducers are not tuned to the same level, you can offset the left Side Imaging beam from the right Side Imaging beam.

1. With a Side Imaging View displayed on-screen, tap Sonar [SI] in the status bar, or press the MENU key once.
2. Select Sonar Options.
3. Select SI Sensitivity Offset.
4. Press and hold the slider, or turn the Rotary dial, to adjust the setting.

### Adjusting the SI Sensitivity Offset





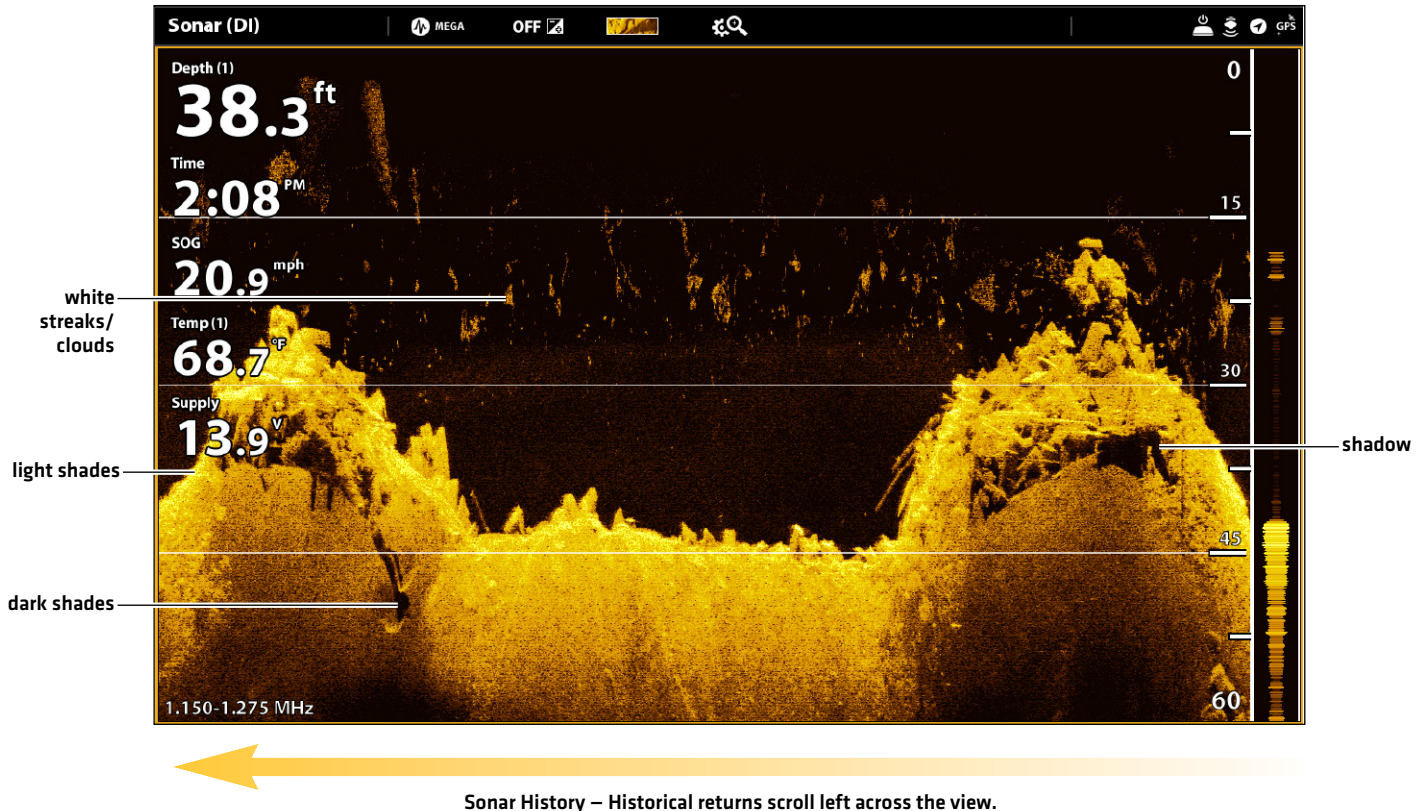
# DOWN IMAGING OVERVIEW

(DOWN IMAGING TRANSDUCER OR SIDE IMAGING TRANSDUCER REQUIRED)

The images you see on the Down Imaging display are produced using sonar technology. Each time the unit pings, a strip of data representing all the echoes received by the transducer are put together on the display to form the image that you see. Like traditional 2D Sonar, the sonar history scrolls left across the screen.

Down Imaging beams “illuminate” the bottom contour, structure, and fish. The beams are wide [side to side] but very thin from front to back.

Down Imaging View: Original Palette



Use the light and dark parts of the display to interpret the objects under your boat as follows:

**Dark shades** represent soft returns [mud, sand] or descending terrain.

**Light shades** represent denser terrain [timber, rocks] or rising terrain. A very hard bottom may appear as white on the display.

**White Streaks** or **Clouds** may represent fish on the display.

**Shadows** are not caused by light but by the lack of a sonar return. Objects standing on the bottom cause a sonar shadow to appear on the display. The longer the shadow, the taller the object. Fish may also cast shadows. You can use the shadow to interpret where the fish or object is located in relation to the bottom.

# CUSTOMIZE THE DOWN IMAGING VIEW

The settings in this section are optional. You can use the default settings for the view, or you can customize it with your preferences. See **Views** for more information.

## OPEN THE DOWN IMAGING PREFERENCES MENU

The Preferences menu allows you to set the palette, zoom mode, and bottom line. For more information about view preferences, see **Views**.

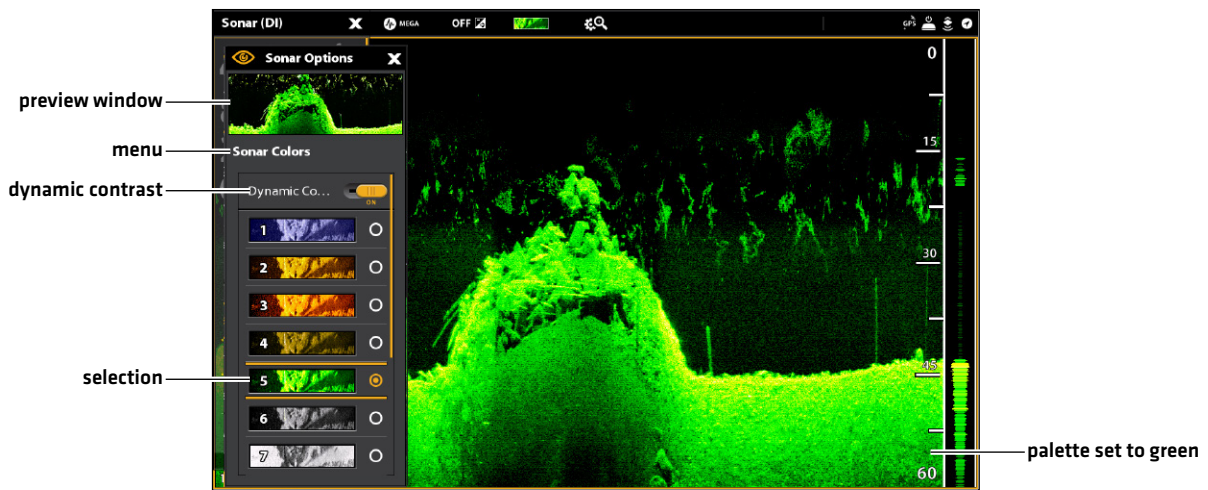
1. With a Down Imaging View displayed on-screen, tap Sonar [DI] in the status bar, or press the MENU key once.
2. Select Sonar Options.
3. Select Preferences.

### Change the Color Palette

The Sonar Colors menu changes the colors used to display sonar returns on the view.

1. From the Preferences menu, select Palette.
2. Select a color palette.

Down Imaging View with a Customized Palette



### Turn on/off Dynamic Contrast

Dynamic Contrast automatically enhances the contrast of the selected color palette.

1. From the Preferences menu, select Sonar Colors.
2. Under Dynamic Contrast, tap the on/off button, or press the ENTER key, to turn it on/off.

## Set the Zoom Mode

The Zoom Mode sets the zoom commands to magnify the full pane or the cursor selection. See *Use Cursor and Zoom in Sonar Views* to apply the zoom features.

1. From the Preferences menu, select Zoom Mode.
2. Select Pane Zoom or Cursor Zoom.

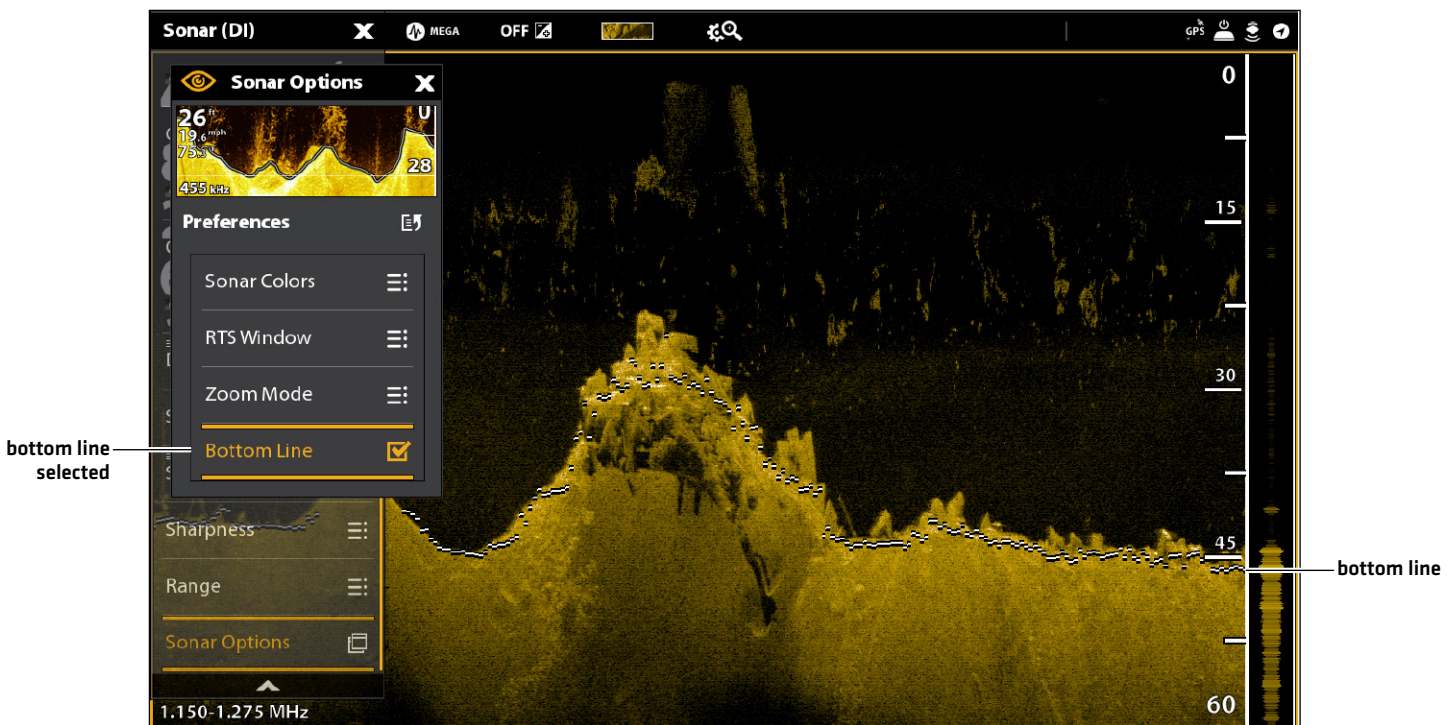
Pane Zoom	When you use pinch out/in (touch screen) to zoom, or press the +/- ZOOM keys, the view will be magnified.
Cursor Zoom	When you use pinch out/in (touch screen) to zoom, or press the +/- ZOOM keys, the cursor selection will be magnified.

## Display the Bottom Line

Add a check mark to Bottom Line to display the depth reading from the Depth Source as a line, either from the selected transducer or another digital depth source. See *Set up your Humminbird Network* for details about selecting sources.

1. From the Preferences menu, tap Bottom Line or press the ENTER key.

### Down Imaging View with Bottom Line Displayed



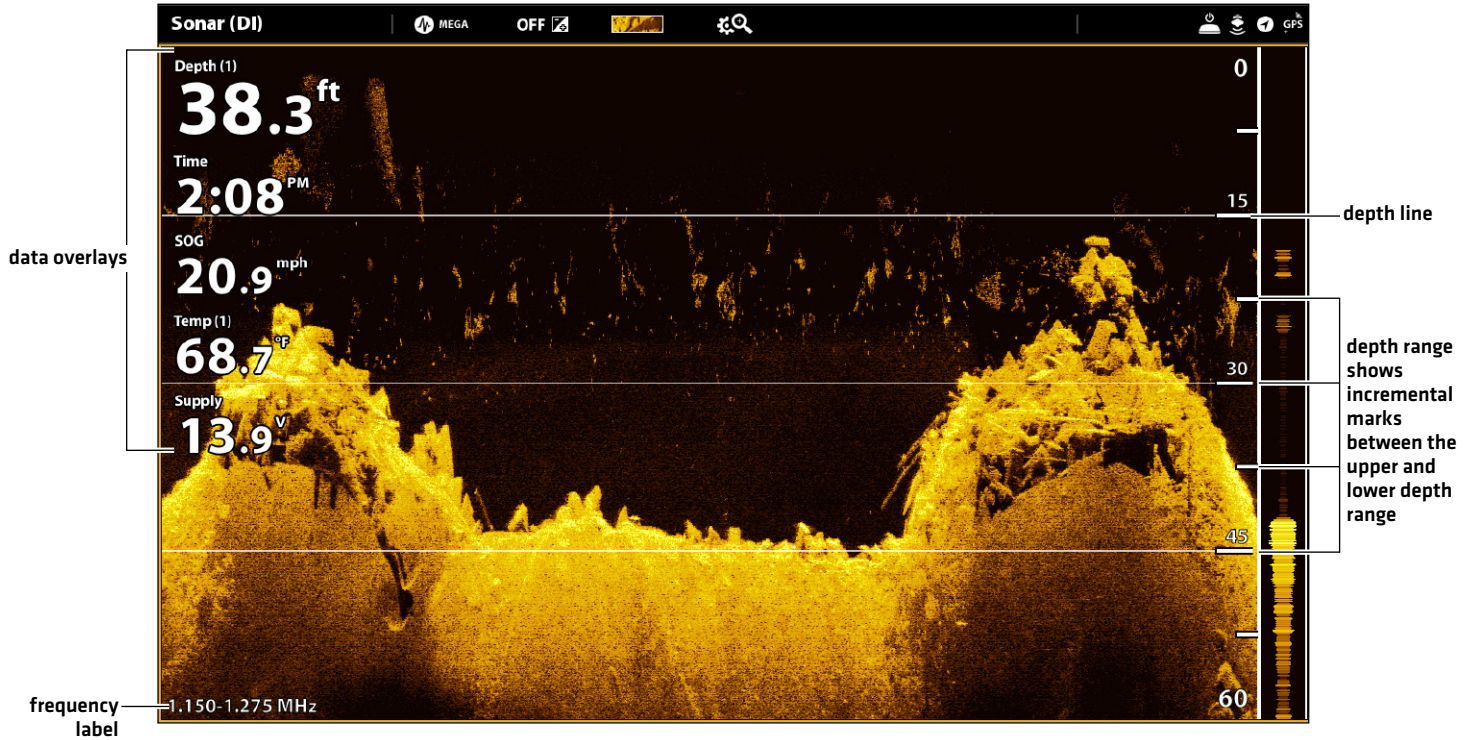


# CHANGE THE DOWN IMAGING VIEW OVERLAYS

Use the Overlays menu to display or hide information on the view. In the Down Imaging View, you can display the following: depth range, beam frequency label, and data overlays. Digital readout data can be displayed as an overlay, and it can be displayed in the data bar. To turn on the data bar, see **Views: Display a Data Bar**. For more information about data overlays, see **Views**.

1. With a Down Imaging View displayed on-screen, tap Sonar [DI] in the status bar, or press the MENU key once.
2. Select Sonar Options.
3. Select Overlays.
4. Tap the menu, or use the Joystick to select an item, and add a check mark. [check mark = visible, blank = hidden].

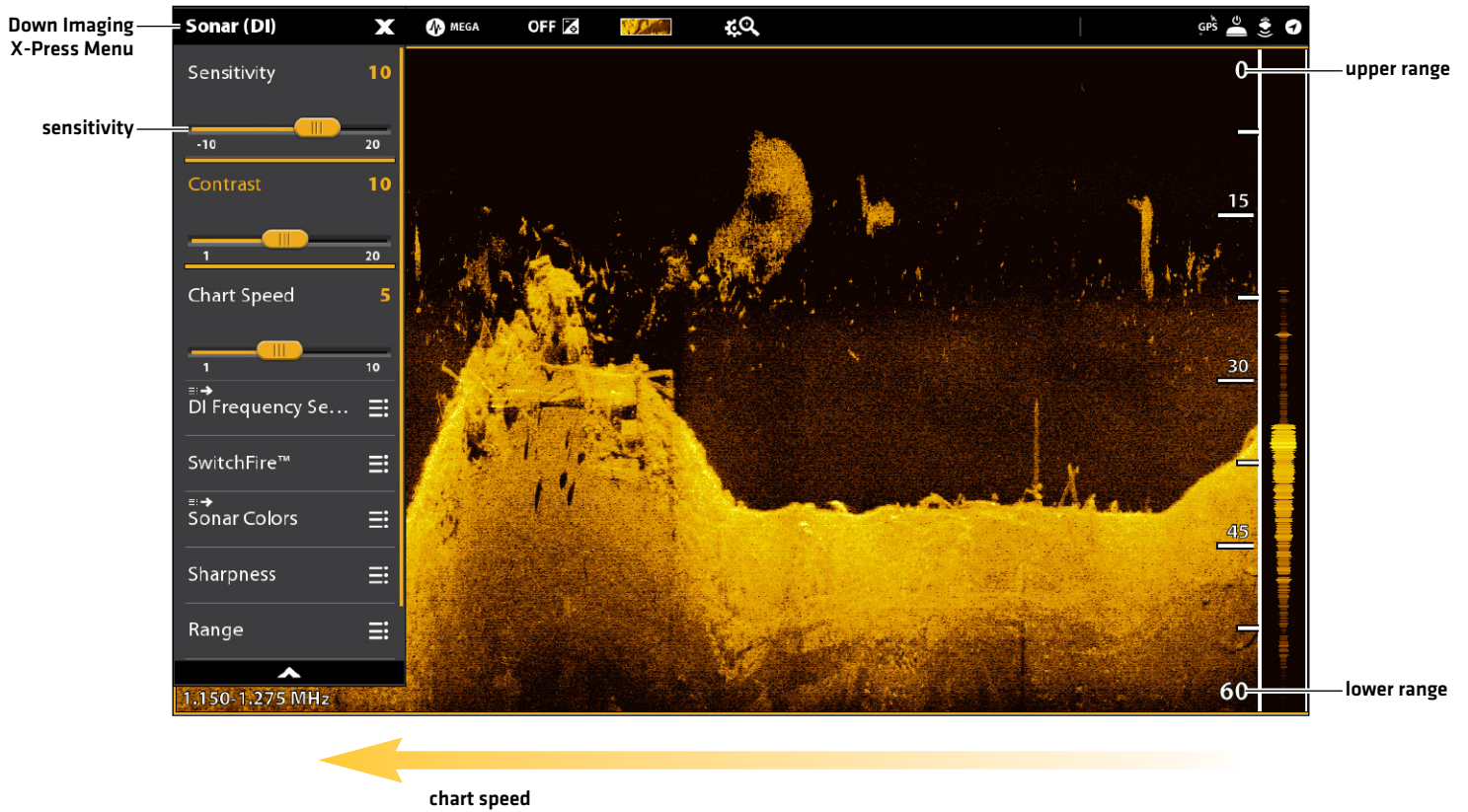
## Selecting Overlays for the Down Imaging View



# ADJUST DOWN IMAGING DISPLAY SETTINGS

The X-Press Menu provides menu options to adjust the sensitivity and range as you fish. You can also mark a particular depth, and you can control how fast the sonar history scrolls across the screen. The menu options allow you to see more or less of the sonar returns from the transducer beams as you adjust each setting.


## Adjusting Down Imaging Display Settings





## Adjust Display Settings

1. With a Down Imaging View displayed on-screen, tap Sonar (DI) in the status bar, or press the MENU key once.
2. Select Sensitivity, Contrast, Chart Speed, Water Column Sensitivity, or Sharpness.
3. Press and hold the slider, or turn the Rotary dial, to adjust the setting.

<b>Sensitivity</b>	Sensitivity controls how much detail is shown on the display and will adjust the sensitivity of all sonar frequencies. <b>Decrease the sensitivity</b> to eliminate the clutter from the display that is sometimes present in murky or muddy water. When operating in very clear water or greater depths, <b>increase the sensitivity</b> to see weaker returns that may be of interest.
<b>Contrast</b>	Adjust the Contrast setting to accent the light and dark parts of the Down Imaging data to provide greater definition.
<b>Chart Speed</b>	Chart Speed determines how fast the sonar history moves across the display and how much detail is shown. Select a faster speed to see more detail. Select a slower speed to keep the sonar history on the display longer.
<b>Water Column Sensitivity</b>	Adjust the setting to increase or decrease the sensitivity of the sonar return that is in the water column.  <b>QUICK TIP!</b> This setting can also be changed in the status bar.
<b>Sharpness</b>	Turn on sharpness and select a filter level to sharpen the edges of the Down Imaging data.

## Set the Range

Range controls how much of the water column is displayed on the view. For example, if you are only interested in the area between 20 and 50 feet deep, set the Upper Range to 20 and the Lower Range to 50. The view will not display sonar returns outside of the set ranges, and greater detail for the selected range will be displayed.

1. With a Down Imaging View displayed on-screen, tap Sonar [DI] in the status bar, or press the MENU key once.
2. Select Range.
3. Select Upper Range. Press and hold the slider, or press and hold the ENTER key, to adjust the setting.
4. Select Lower Range.

**Auto:** Move the slider to Auto. The Lower Range will be adjusted by the control head to follow the bottom automatically.

**Man [Manual]:** Move the slider to Manual and adjust the setting.

## Display the Depth Marker

To mark a specific depth on the view, turn on Depth Marker. This menu is available in Custom Mode (see **The Menu System: Change the User Mode**).

1. With a Down Imaging View displayed on-screen, tap Sonar [DI] in the status bar, or press the MENU key once.
2. Select Sonar Options > Depth Marker.
3. Tap the on/off button, or press the ENTER key, to turn it on.
4. Press and hold the slider, or press and hold the ENTER key, to adjust the setting.

## Select Frequencies

If there are multiple beams available in a transducer, you can display individual frequencies on the view. See **Installation Information: Set up your Humminbird Network, Select Sonar Sources** and **Set up or Change Transducer Settings** for details.

1. With a Down Imaging View displayed on-screen, tap the frequency menu in the status bar.

**OR**

Press the MENU key. Select DI Frequency Select.

2. Select a frequency from the list.



**NOTE:** If the control head is using a sonar source with only one beam frequency, the frequency list will not offer additional options.




**QUICK TIP!** This setting can also be changed by pressing and holding the ENTER key.

# USE CURSOR AND ZOOM IN SONAR VIEWS

(2D, SI, DI)


You can use the cursor in the 2D Sonar, Side Imaging, and Down Imaging Views. With the cursor activated, you can magnify sonar returns on the view to get a closer look.

 **NOTE:** To display the 2D Sonar View in Split Zoom mode, see **Customize the 2D Sonar View: Change the Sonar Mode**.

## Change the Zoom Mode

---

In 2D Sonar View and Down Imaging View, the sonar returns will be magnified based on the Zoom Mode setting. You can magnify the full view [Pane Zoom] or a selected area of the view [Cursor Zoom]. See **Customize the 2D Sonar View** or **Customize the Down Imaging View** for more information.

 **QUICK TIP!** You can also select this menu on the status bar.

### Touch Screen

1. With a 2D Sonar View or Down Imaging View displayed on-screen, tap Sonar in the status bar.
2. Select Sonar Options.
3. Select Preferences.
4. Select Zoom Mode.
5. Select Pane Zoom or Cursor Zoom.

### Keypad

1. With a 2D Sonar View or Down Imaging View displayed on-screen, press the MENU key once.
2. Select Sonar Options.
3. Select Preferences.
4. Select Zoom Mode.
5. Select Pane Zoom or Cursor Zoom.

## Activate the Cursor

---

### Touch Screen

1. Tap a position on the 2D Sonar, Down Imaging, or Side Imaging View.

### Keypad

1. Move the Joystick.

## Zoom In/Out

---

### Touch Screen

1. **Zoom In:** Tap the position twice [double tap].
2. **Zoom Out:** Tap the screen with two fingers once [single tap].

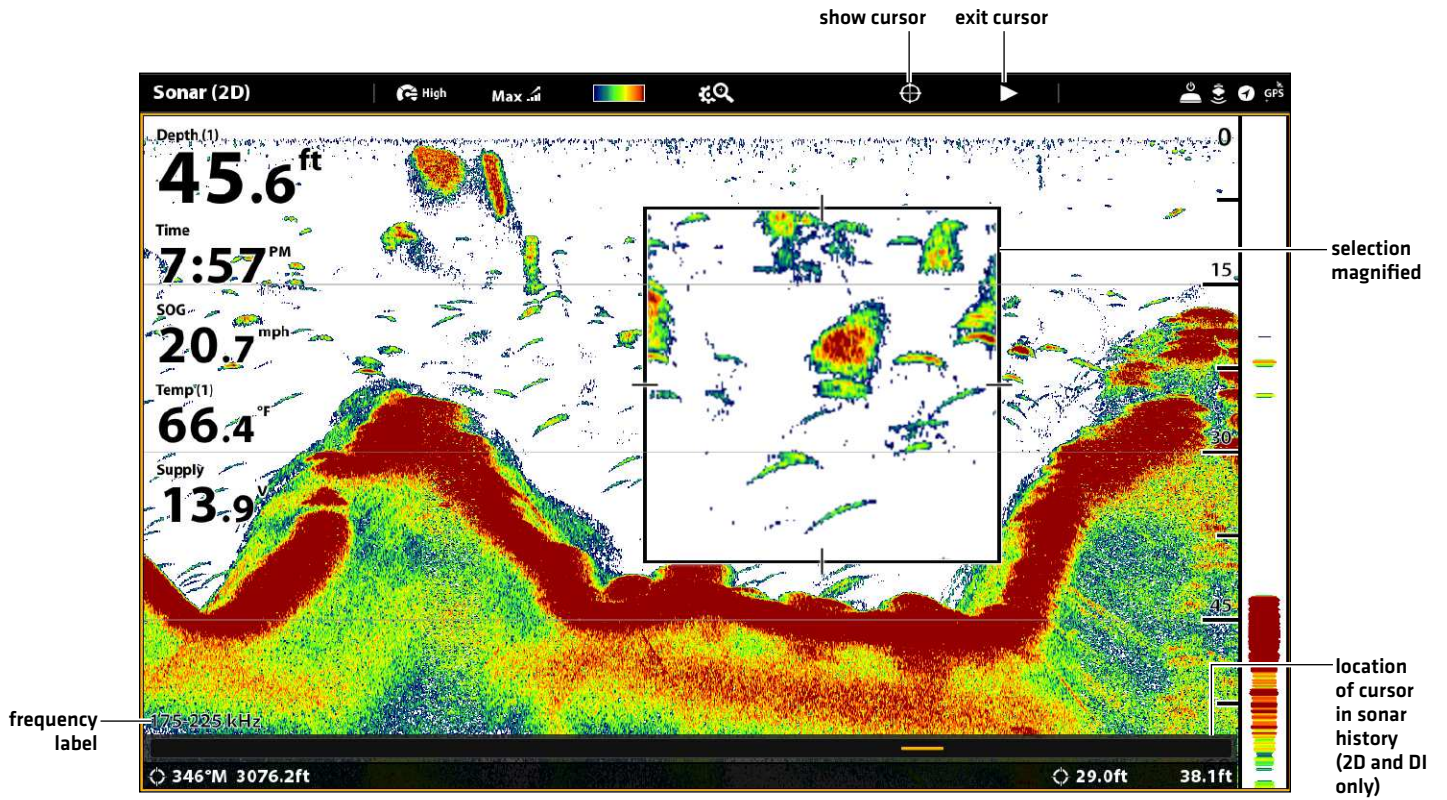
OR

1. **Zoom In:** Touch the screen with two fingers and move them apart [pinch out].
2. **Zoom Out:** Touch the screen with two fingers and move them together [pinch in].

### Keypad

1. **Zoom In:** Press the +ZOOM key.
2. **Zoom Out:** Press the - ZOOM key.

## Using Cursor Zoom Mode [2D Sonar View]

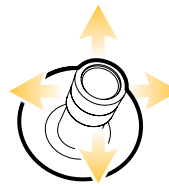


Tap to Activate the Cursor



Pinch out to Magnify the Selection

OR



Move the Joystick to Activate the Cursor



Press the + ZOOM key to Magnify the Selection



To mark waypoints and start navigation, the control head must have a GPS fix from a connected or internal GPS receiver. The navigation menus can be accessed from the X-Press Menu, touch screen, and the keypad.

## Mark a Waypoint

You can mark a waypoint on the Sonar Views using the keypad or touch screen. You can also mark a waypoint at the vessel position or the cursor position.

### Mark a Waypoint at the Vessel Position

#### Touch Screen

1. Tap Sonar in the status bar.
2. Select Mark.
3. Select Waypoint.
4. Select a Waypoint icon from the Favorites menu.

#### Keypad

1. Press the MARK key twice.
2. Select a Waypoint icon from the Favorites menu.

### Mark a Waypoint at the Cursor Position

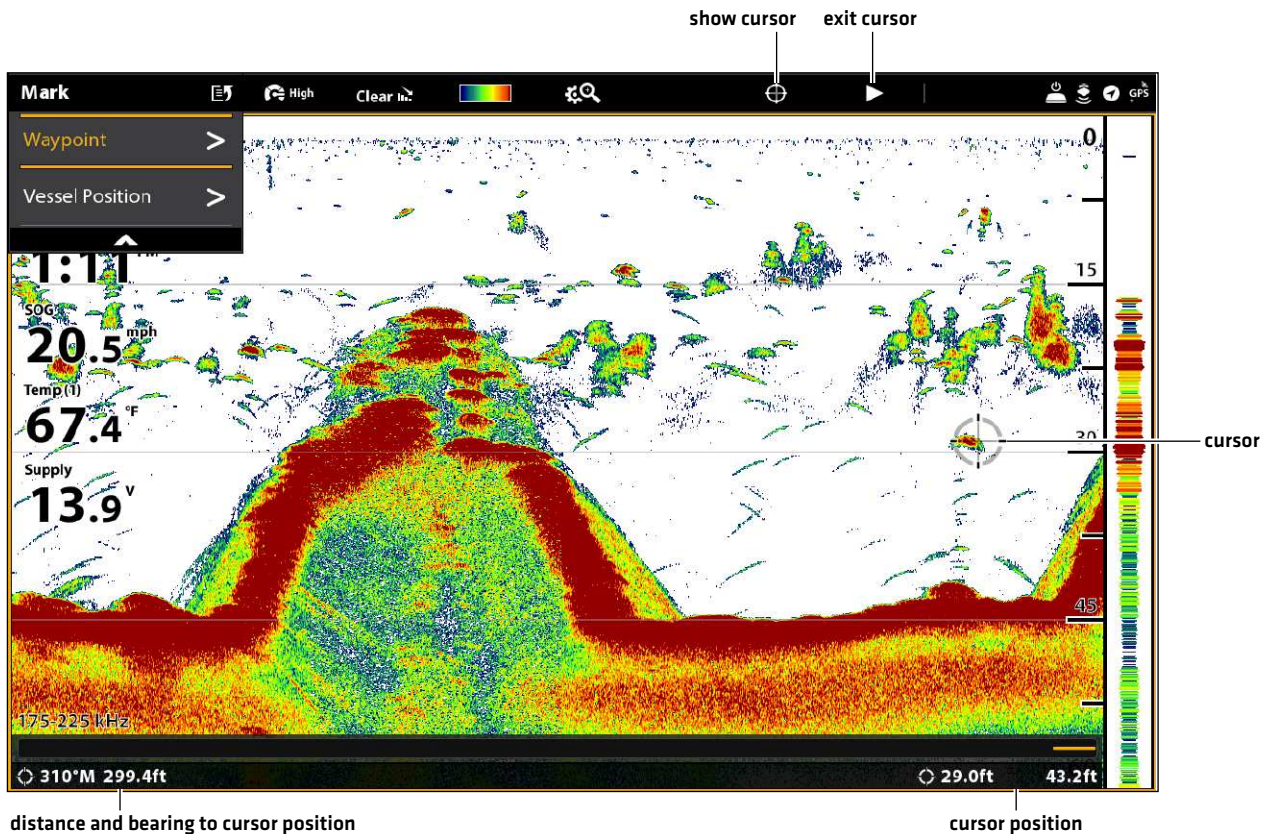
#### Touch Screen

1. Press and hold a position on the Sonar View.
2. Select Waypoint.
3. Select a Waypoint icon from the Favorites menu.

#### Keypad

1. Use the Joystick to move the cursor to a position on the Sonar View.
2. Press the MARK key twice.
3. Select a Waypoint icon from the Favorites menu.

### Marking a Waypoint (2D Sonar View)



## Navigate to a Position

Use the instructions in this section to start navigation to a position in the Sonar Views. See *Introduction to Navigation* for more information about these features.

### Start Navigation

---

#### Touch Screen

1. Press and hold a position on the Sonar View.
2. Select Go To Cursor.

#### Keypad

1. Press the GO TO key.
2. **To start navigation to a saved position**, select Nav Data. Select a saved position, and press the GO TO key.  
**To enter a latitude/longitude position**, select Lat/Long.
3. Continue to follow the on-screen prompts to start navigation.



**NOTE:** In Side Imaging Views, if SI Navigation is turned on, the boat icon will turn to indicate the direction the boat needs to turn to reach the next waypoint during navigation (see *Customize the Side Imaging View: Turn on/off SI Navigation*).

### Cancel Navigation

1. During navigation, tap Sonar in the status bar. Select Go To.

**OR**

Press the GO TO key.

2. Select Cancel Navigation.

# SONAR RECORDING

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Use the Sonar Recording menu to record active sonar information. Sonar recordings are saved to an installed SD card, and you can play your saved sonar recordings from the Recordings tool. When the recording is played back, the views that were active during the recording are available. You can also adjust the view settings and mark waypoints during playback.

## Start Recording

When you start a sonar recording, you can select which beams will be recorded and where the sonar recording will be saved.

1. Press the HOME key.
2. Select the Record tool.
3. Under Record Sonar, set up the sonar recording:  
Select Recording Sources, and select the beams to be recorded.  
Select Save Location, and select an installed SD card.
4. Select Start Recording.

## Stop Recording

1. Press the HOME key.
2. Select the Record tool.
3. Under Record Sonar, select Stop Recording.

## Play a Sonar Recording

1. Press the HOME key.
2. Select the Record tool.
3. Tap the recording name, or use the Joystick to select it.
4. Select Start.

## Open the Playback Control Menu

The Playback Control menu includes stop, pause, forward or reverse for the recording played on the screen.

1. Play a sonar recording.
2. With a Sonar View [2D, SI, DI] displayed on-screen, tap Sonar in the status bar.

**OR**

- Press the MENU key once.
3. Select Sonar Playback.

# IMAGES TOOL

The Images tool displays the screen snapshots saved to the control head or to the installed SD cards. You can edit, rename, copy, and delete a screen snapshot. You can also view your saved screen snapshots (JPG files) as a slide show, and you can change the Home screen background image.

## Take a Screen Snapshot

Use the screen snapshot feature to take a picture of the on-screen view. The screen snapshot includes the warnings, menus, and messages that were active when the screen snapshot was taken. If Create Waypoint is turned on, a waypoint will be marked when you take the screen snapshot. See **Screen Snapshot Settings** for details.



1. Press and hold the GO TO/Screen Snapshot key.

## Open the Images Tool

Open the Images tool to see all the screen snapshots saved to the control head, installed SD cards. You can also view each save location individually, and the images can be sorted by name, date, or file type.

### Open the Images Tool

1. Press the HOME key.
2. Select the Images tool.

Browsing Screen Snapshots in the Images Tool

The screenshot shows the 'Images' tool interface. On the left is a sidebar with a 'Source' section containing 'Show All' (highlighted in orange), 'Internal', 'SD Card (1)', and 'SD Card (2)'. Below this is an 'Options' section with 'Settings' and 'Start Slideshow >'. The main area displays a grid of saved screen snapshots. A hand icon points to one of the snapshots in the grid. On the right side, a hand icon points to a vertical scroll bar, with an arrow indicating scrolling up and down. Labels with arrows point to the 'Show All' option and the grid of snapshots.



## Sort Screen Snapshots

1. From the Images tool, select Settings.
2. Select Sort Options.
3. Select a sort option to sort by Name, Date, or File Type.

To view the images from newest to oldest, select Reverse Order. Tap the on/off button, or press the ENTER key, to turn it on.

## Screen Snapshot Settings

Screen snapshots are automatically saved to the control head as JPG files. To save screen snapshots to an SD card, set up the save location in advance. If you turn on Create Waypoint, each time a screen snapshot is taken, the waypoint position will be saved.

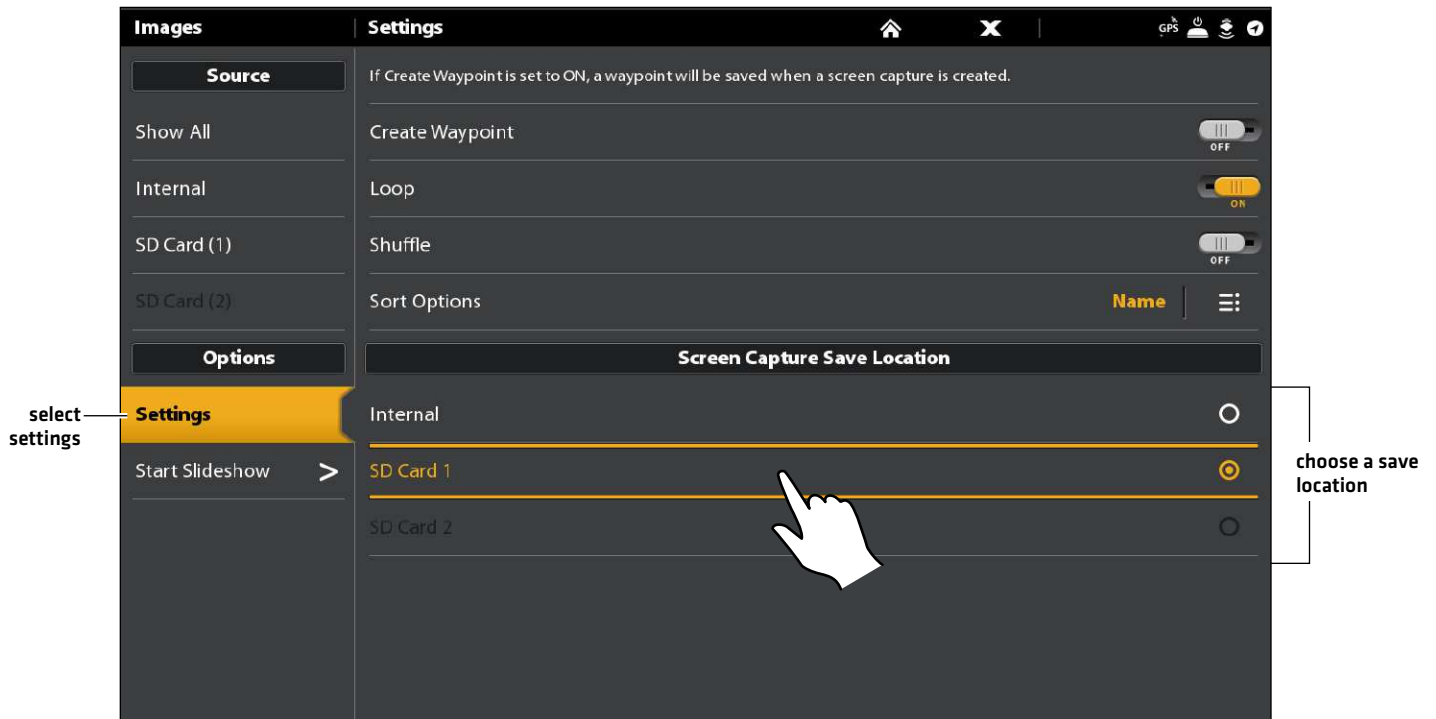
## Save Screen Snapshots to an SD Card

1. Install an SD card into a control head port.
2. Press the HOME key.
3. Select the Images tool.
4. Select Settings.
5. Under Screen Capture Save Location, select an installed source:

**Control Heads with Vertical SD Card Slots:** left port = SD Card 1 or right port = SD Card 2; default = Internal

**Control Heads with Horizontal SD Card Slots:** top port = SD Card 1 or bottom port = SD Card 2; default = Internal

### Selecting a Save Location



## Create a Waypoint with Screen Snapshot

If you turn on Create Waypoint in the Images tool, each time a screen snapshot is taken, the waypoint position will be saved.

1. Press the HOME key.
2. Select the Images tool.
3. Select Settings.
4. Select Create Waypoint. Tap the on/off button, or press the ENTER key, to turn it on.

When a screen snapshot is taken with Create Waypoint turned on, the screen snapshot will display a waypoint icon in the Images tool preview.

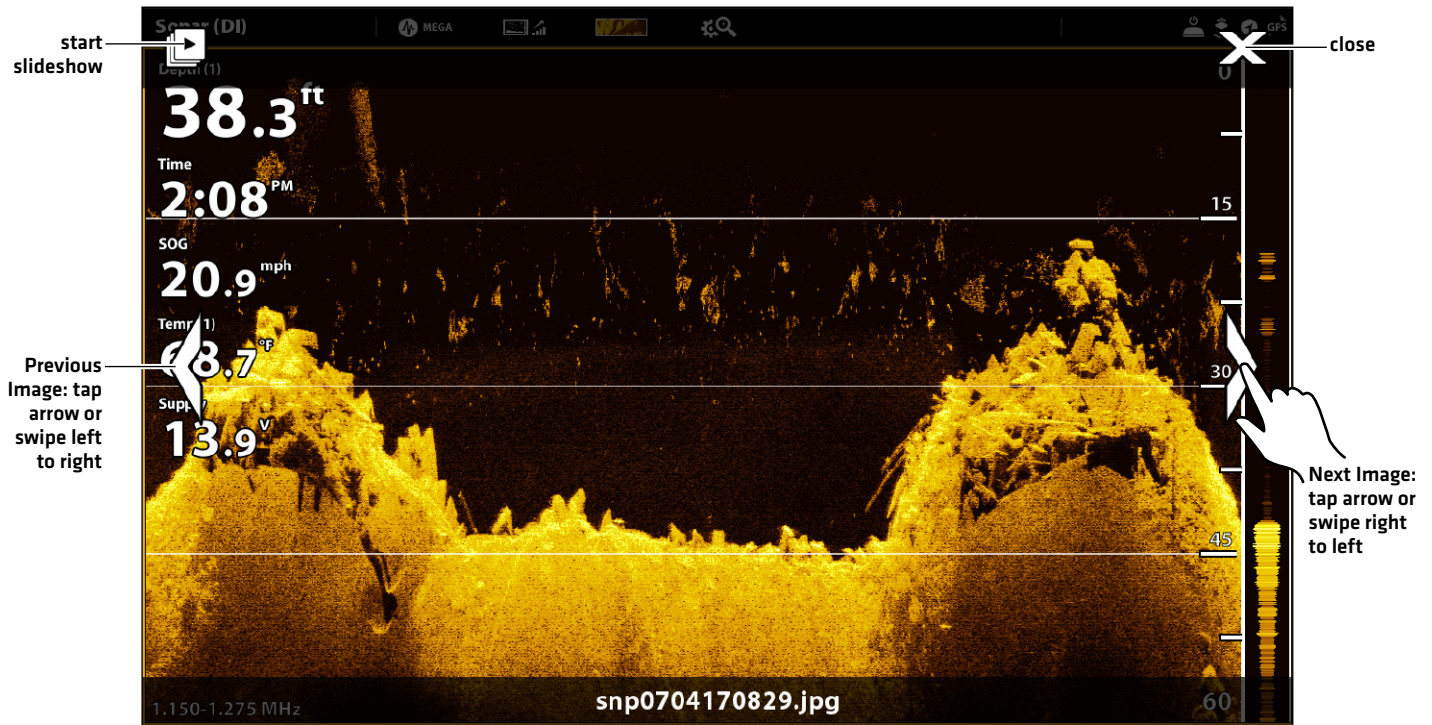


screen snapshot saved with  
Create Waypoint turned on

## Display Screen Snapshots and Slideshow

When you select a saved screen snapshot (JPG file) from the Images tool, you can display it in full-screen using the touch screen or keypad.

### Using the Touch Screen with a Saved Screen Snapshot



## Display a Screen Snapshot

### Touch Screen

1. From the Images tool, tap a screen snapshot.

#### Scroll to the Next Image/Previous Image:

Tap the on-screen arrows.

#### Return to the Images Tool:

Tap the on-screen X icon.

### Keypad

1. Use the Joystick to select a screen snapshot.
2. Press the ENTER key.

#### Scroll to the Next Image/Previous Image:

Turn the Rotary dial.

#### Return to the Images Tool:

Press the EXIT key.

## Set up the Slideshow

Screen snapshots and pictures from your camera's SD card can be displayed in a slideshow. You can use the control head default settings to play the slide show, or you can set the slideshow to loop or shuffle.

1. From the Images tool, select Settings.
2. To set up the slide show so it runs continuously, turn on Loop.  
To set up the slide show so it displays screen snapshots randomly, turn on Shuffle.

## Play the Slideshow

1. Under Options, select Start Slideshow.
2. **Stop:** Tap the screen, and press the X icon on the screen.

OR

Press the EXIT key.

## Edit Screen Snapshots

The Images Options menu allows you to edit the name and review the file information for the selected screen snapshot. You can also copy screen snapshots to another save location or delete them.

### Change a Screen Snapshot Name

1. From the Images tool, press and hold a screen snapshot.

**OR**

Use the Joystick to select a screen snapshot. Press the MENU key.

2. Select Name. Use the on-screen keyboard to enter a name.
3. Select Save.

### Review Screen Snapshot Information

When you save a screen snapshot, the date and time the screen snapshot was taken is saved. If Create Waypoint is turned on, the position and waypoint name are also saved with the screen snapshot. Use these instructions to review the saved information.

1. From the Images tool, press and hold a screen snapshot.

**OR**

Use the Joystick to select a screen snapshot. Press the MENU key.

2. Select Info.

### Copy a Screen Snapshot

1. From the Images tool, press and hold a screen snapshot.

**OR**

Use the Joystick to select a screen snapshot. Press the MENU key.

2. Select Copy.

To copy all screen snapshots, select Copy All.

3. Select a location to save the copy.

### Delete a Screen Snapshot

1. From the Images tool, press and hold a screen snapshot.

**OR**

Use the Joystick to select a screen snapshot. Press the MENU key.

2. Select Delete.

To delete all screen snapshots, select Delete All.



## INSTALLATION INFORMATION

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This section includes information that may be required to connect new equipment or a new accessory to the control head. There are several configurations available for your APEX or SOLIX control head. You can network control heads, connect accessories to an Ethernet network, connect to a NMEA 2000 network, and add transducers to your system through black box sonar. For configuration options and the latest Humminbird accessories, visit our Web site at [humminbird.com](http://humminbird.com).

Installation guides are included with each hardware component to install equipment purchased separately (transducer, heading sensor, radar, AIS, autopilot, and accessories). See your installation guides for details.

**Unused Ports:** Any unused ports should be covered with the port covers to prevent potential damage to the control head.

**Cables:** We also recommend that you label the cables with waterproof tags for future reference.



**WARNING!** Before you connect cables to the control head, or disconnect cables, the control head power and equipment power sources must be turned off.



**CAUTION!** Before you update the control head software, synchronize units on the network, or restore system defaults, export your control head menu settings to an SD card. It is also recommended to export your navigation data to an SD card. See **Update Software** for details.



**NOTE:** If you have questions about the installation or troubleshooting, see your control head installation guide. Also, contact Humminbird Technical Support at [humminbird.com](http://humminbird.com).

# SET UP OR CHANGE TRANSDUCER SETTINGS

(ADVANCED SETTINGS)

When you connect a transducer to a black box sonar or to the APEX/SOLIX control head, the transducer will be detected in the network automatically. The best transducer source will be chosen and start pinging automatically. If you connect an accessory transducer to the network, the unit will recognize the new transducer.

**⚠ WARNING!** The instructions in this section are advanced and not recommended for the typical user. Changing these settings incorrectly could damage the transducer.


**📝 NOTE:** For black box sonar and sonar networking information, see **Set up your Humminbird Network**. Also, to set up an Airmar transducer, or for troubleshooting information, download the Transducer Setup Guide from our Web site at [humminbird.com](http://humminbird.com).

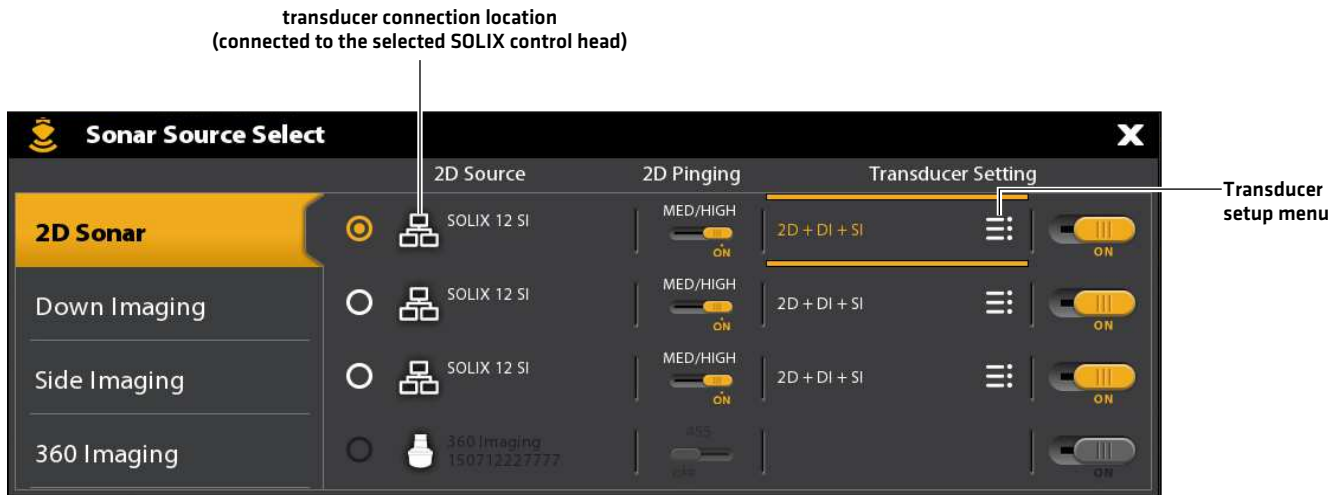
**📝 NOTE:** Humminbird has provided the best settings for your unit. You can use the settings included with your control head, or you can adjust these advanced options.

## Set up or Change Transducer Settings (not recommended)

Use the instructions in this section to enable a transducer with its complete functionality.


1. Press the HOME key.
2. Select Settings.
3. Select CHIRP Sonar.
4. Select Sonar Source.
5. Select Initial Setup.

If the transducer has been set up, but you want to change a transducer setup setting, select the  menu icon.




6. **Sonar Capabilities:** On the Transducer Setup menu, add a check mark next to each sonar capability for the selected transducer.

For example, for a 2D transducer, the 2D Sonar menu needs to be checked. For a Side Imaging transducer, 2D Sonar, SI Sonar, and DI Sonar need to be checked because the transducer includes all three capabilities. See the illustrations for examples.

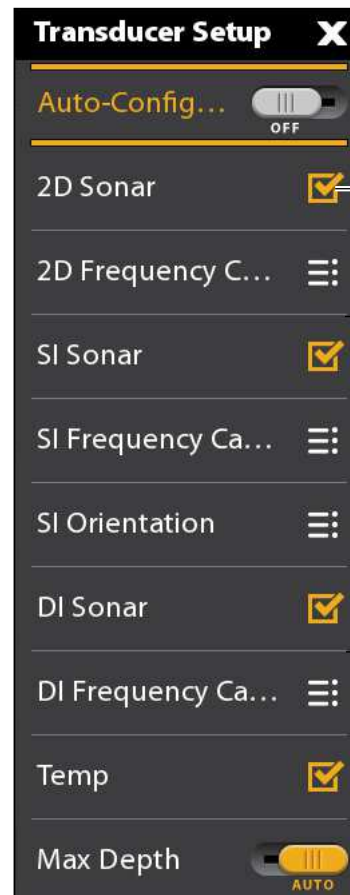
 **NOTE:** The capabilities of your sonar model are shown on the packaging, or you can find your transducer on our Web site at [humminbird.com](http://humminbird.com).

7. **Frequencies:** Select the Frequency Capability Menu under each checked sonar capability. Confirm that all frequencies in the list are selected, so all frequencies are enabled. [You can select individual frequencies to view at a later time.]
  8. **Temp:** If the transducer includes a temperature probe, add a check mark to Temp.
  9. **Max Depth [optional]:** When Max Depth is set to Auto, the maximum depth is determined by the transducer frequency, and the control head will acquire bottom readings as needed [within the capacity of the unit]. Auto is the recommended setting for this menu.
- To manually set the Max Depth, select MAN [Manual], and adjust the slider to the maximum depth setting. The transducer will not attempt to acquire sonar data below that depth, so more detail will be shown on the sonar view.
10. **Depth Offset [optional]:** Depth Offset adjusts the digital depth readout to indicate the distance from the transducer to the waterline.
  11. Repeat the steps in this section for each transducer as needed.

 **NOTE:** Make sure all capabilities have a check mark so the full functionality of the transducer is enabled. To select sonar sources from the network, see **Set up your Humminbird Network**.

 **NOTE:** The menu options are determined by the connected transducer.

## 2D Transducer Setup (83/200 kHz or 50/200 kHz)



Add a check mark to 2D Sonar to enable 2D capabilities.


To enable the full functionality of the transducer, add a check mark to each category the transducer is capable of pinging.


## Select Beams and Display Frequencies

If the selected transducer [sonar source] includes more than one beam, you can select which beam will be displayed in the sonar view. The beams selected in this menu affect all units that are sharing the sonar source. See **Set up your Humminbird Network: Select Sonar Sources** for details.

### Select Frequencies for the 2D Sonar View (not recommended)

The frequencies selected in this menu affect all units that are sharing the sonar source. For example, if you select the blended Medium/High Frequency Select mode for one control head, and you select the single Medium Frequency Select mode on another control head, the control head with the single Medium Frequency selection will still be pinging the High Frequency in the background even though it is not displayed on the view.

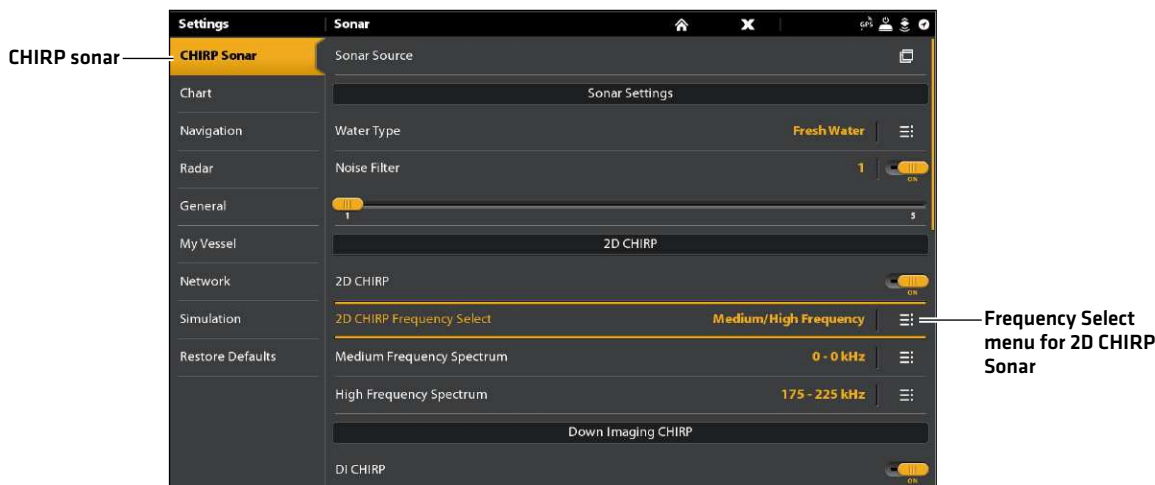
 **NOTE:** Humminbird has provided the best settings for your unit. You can use the settings included with your control head, or you can adjust these advanced options.

 **QUICK TIP!** You can also select this menu on the status bar and in the X-Press Menu in 2D Sonar View.

1. Press the HOME key.
2. Select Settings.
3. Select CHIRP Sonar.
4. Under 2D CHIRP, select 2D CHIRP Frequency Select.
5. Select a frequency.

See the **Frequency Select Options** tables on the following pages. To access all beams in the 2D Sonar View, but view individual frequencies on different control heads, select Auto, Medium, or Medium/High Frequency.

### Selecting 2D CHIRP Sonar Frequencies



2D Frequency Select (CHIRP Off, On)	
<b>Auto [recommended]</b>	<p>Auto is the default selection. When Auto is selected, all sonar source beams are available for display in the 2D Sonar View.</p> <p>When Auto is selected, the transducer will only ping when the 2D Sonar View is being used, which may cause interruptions in the sonar history if the view is closed and then reopened. To display sonar history without interruption, select the blended Medium/High Frequency beams.</p>
<b>Medium Frequency</b>	<p>Select Medium Frequency for deep water [more than 800 feet]. Medium Frequency can be used for deep returns at high speed. If Medium Frequency is selected, the high frequency beam pings in the background but is not displayed.</p>
<b>High Frequency</b>	<p>Select High Frequency for more detail at shallower depths [less than 800 feet]. If High Frequency is selected, the medium frequency beam is not available.</p>
<b>Medium/High Frequency</b>	<p>Select Medium/High Frequency to ensure both beams ping continuously, so the sonar history is not interrupted if the Sonar View is closed.</p> <p>The returns from both beams are blended by starting with the wide beam return, dimming it, and then overlaying it with the narrow beam return. The narrow beam sonar returns will stand out from the wide beam sonar returns.</p>



## Select and Display Frequencies for the Side Imaging View (optional, CHIRP MEGA SI and CHIRP MEGA SI+ models only)

Use the instructions in this section to choose a frequency that will be used for the Side Imaging View.



**QUICK TIP!** You can also select this menu on the status bar and in the X-Press Menu in Side Imaging View.

1. Press the HOME key.
2. Select Settings.
3. Select CHIRP Sonar.
4. Under Side Imaging CHIRP, select SI Frequency Select and Display.
5. Select a frequency.

See the *SI Frequency Select and Display Options* table below.

<b>CHIRP MEGA SI Models SI Frequency Select and Display Options (CHIRP Off, On)</b>	
<b>MEGA+</b>	Select MEGA+ for the highest resolution, sharpness, and range [up to 500 ft side to side].
<b>MEGA</b>	Select MEGA for the highest resolution, sharpness, and range [up to 250 ft side to side].
<b>800 kHz</b>	Select 800 kHz as an alternative frequency with sharp returns [up to 250 ft side to side].
<b>455 kHz</b>	Select 455 kHz for deep water and overall coverage [up to 800 ft side to side].

## Select and Display Frequencies for the Down Imaging View (optional, CHIRP MEGA DI, MEGA DI+, MEGA SI, and MEGA SI+ models only)

Use the instructions in this section to choose a frequency that will be used for the Down Imaging View. The menu options are determined by the installed transducer and control head model.



**QUICK TIP!** You can also select this menu on the status bar and in the X-Press Menu in Down Imaging View.

1. Press the HOME key.
2. Select Settings.
3. Select CHIRP Sonar.
4. Under Down Imaging CHIRP, select DI Frequency Select and Display.
5. Select a frequency.

See the *DI Frequency Select and Display Options* table.

CHIRP MEGA DI and MEGA SI Models DI Frequency Select and Display Options (CHIRP Off, On)	
MEGA+	Select MEGA+ for the highest resolution, sharpness, and range (up to 250 ft).
MEGA	Select MEGA for the highest resolution, sharpness, and range (up to 125 ft).
800 kHz	Select 800 kHz as an alternative frequency with sharp returns (up to 125 ft).
455 kHz	Select 455 kHz for deep water and overall coverage (up to 400 ft).

### Adjust the CHIRP Frequency Spectrum (not recommended)

Your control head has been configured with the best settings for a wide range of fishing conditions, and we recommend using the default start and end CHIRP frequency spectrum included with your unit. However, you can adjust the CHIRP Frequency Spectrum to limit the interferences on the display or refine the settings to your preference. The menu options are determined by the installed transducer and control head model.

**Requirements:** CHIRP mode must be turned on. The menus are also determined by the display frequency you have selected for each view.



**WARNING!** If an accessory transducer is installed, confirm it is configured in the control head. See **Set up or Change Transducer Settings** for details. For information about accessory transducers, visit our Web site at [humminbird.com](http://humminbird.com).

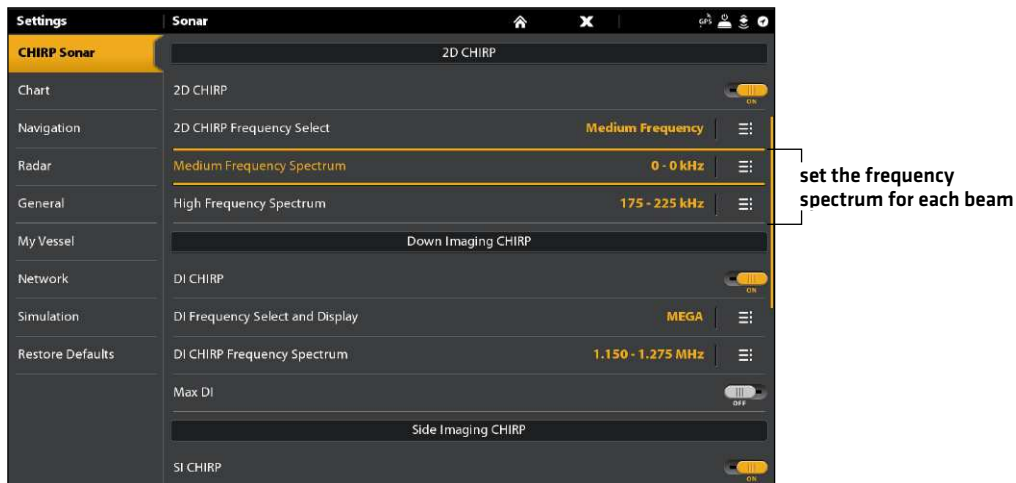
### Adjust the CHIRP Frequency Spectrum (2D CHIRP, SI CHIRP, DI CHIRP)(not recommended)

1. Press the HOME key.
2. Select Settings.
3. Select CHIRP Sonar.
4. Under 2D CHIRP, Down Imaging CHIRP, or Side Imaging CHIRP, select the Frequency Spectrum menu.
5. Select Start Frequency or End Frequency.
6. Press and hold the slider, or press and hold the ENTER key, to set the frequency.
7. **Repeat:** Repeat steps 5 and 6 to adjust both the Start Frequency and End Frequency.
8. **Close:** Press the EXIT key.
9. **Repeat:** Repeat steps 4 through 8 to set the Start Frequency and End Frequency for each sonar type and beam you are using.



**NOTE:** You can also adjust the single frequency range when CHIRP is off. See **Turn On/Off CHIRP Sonar**.

## Setting the 2D CHIRP Frequency Spectrum

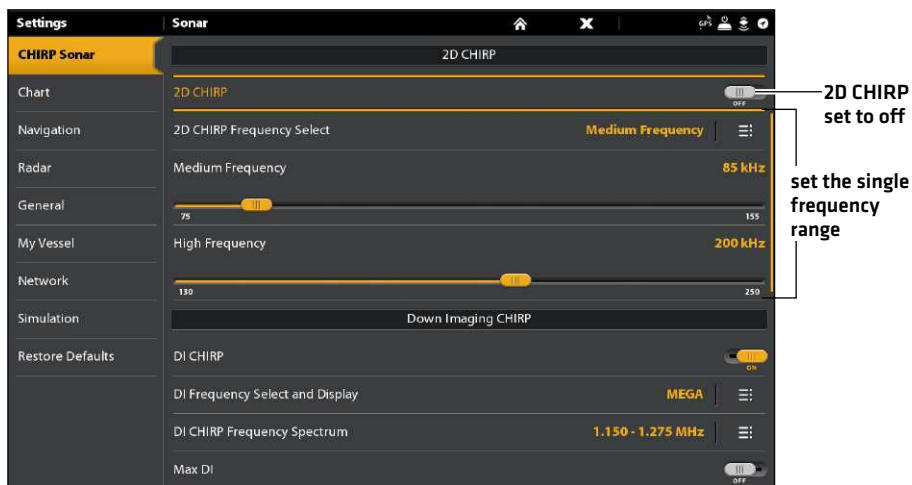


### Turn On/Off CHIRP Sonar (not recommended)

To view digital CHIRP sonar, CHIRP must be turned on. To view single frequency sonar, turn CHIRP off. You can also adjust the single frequency range.

1. Press the HOME key.
2. Select Settings.
3. Select CHIRP Sonar.
4. Select 2D CHIRP, DI CHIRP, or SI CHIRP.
5. Tap the on/off button, or press the ENTER key, to turn it on or off.

### Turning 2D CHIRP Sonar Off



## Change the Water Type

Use the instructions in this section to change the Water Type setting.

1. Press the HOME key.
2. Select Settings
3. Select CHIRP Sonar.
4. Under Sonar Settings, select Water Type.
5. Select Fresh Water, Salt Water [200 ft [61 m] or deeper], or Salt Water Shallow [20 ft [6.1 m] or less]. Tap the item or use the Joystick to make your selection.

## Adjust the Noise Filter (not recommended)

Use Noise Filter to limit the interference that may appear on the sonar views from sources such as your boat engine, turbulence, or other sonar devices.

1. Press the HOME key.
2. Select Settings
3. Select CHIRP Sonar.
4. Under 2D CHIRP, Down Imaging CHIRP, or Side Imaging CHIRP, select Noise Filter.
5. Tap the on/off button, or press the ENTER key, to turn it on.
6. Press and hold the slider, or turn the Rotary dial, to adjust the setting.

## Change the Side Imaging Orientation (CHIRP MEGA SI models only)

Use SI Orientation to switch how the Side Imaging beams are displayed on the Side Imaging View. This menu option can be used if the port and starboard beams are reversed during installation, which might be the case if a transducer is installed incorrectly. For further assistance, contact Humminbird Technical Support.

1. Press the HOME key.
2. Select Settings
3. Select CHIRP Sonar.
4. Select Sonar Source.
5. Under Side Imaging, select the Side Imaging source.
6. Open the Transducer Setup menu. Select SI Orientation.
7. **To display the beams as the transducer[s] is installed**, select Normal.  
**To change how the beams are displayed so that port and starboard are switched**, select Reverse.

## Change Imaging+ Presets (MEGA SI+ and DI+ models only)

Use one of the Imaging+ Presets to change your frequency for maximum detail or maximum coverage.

1. Press the HOME key.
2. Select Settings.
3. Select CHIRP Sonar.
4. **DI+**: Under DI CHIRP Frequency Spectrum, select one of the presets: Increased Detail, Increased Depth.  
**SI+**: Under SI CHIRP Frequency Spectrum, select one of the presets: Increased Detail, Increased Range.

The instructions in this section apply to the following Humminbird radar models only:

- RH 5
- RH 44
- AS 21RD4KW
- AS 12RD2KW



**NOTE:** The instructions in this section do not apply to the Humminbird CHIRP radar.

## Radar Configuration

The radar should be configured by a qualified radar technician after installation or equipment repair. The settings in this section should only be needed periodically. We recommend that you contact Humminbird Technical Support at **1-800-633-1468** before using the menus in this section.



**WARNING!** The features in this section affect the performance of the radar and should only be adjusted by a qualified radar technician.

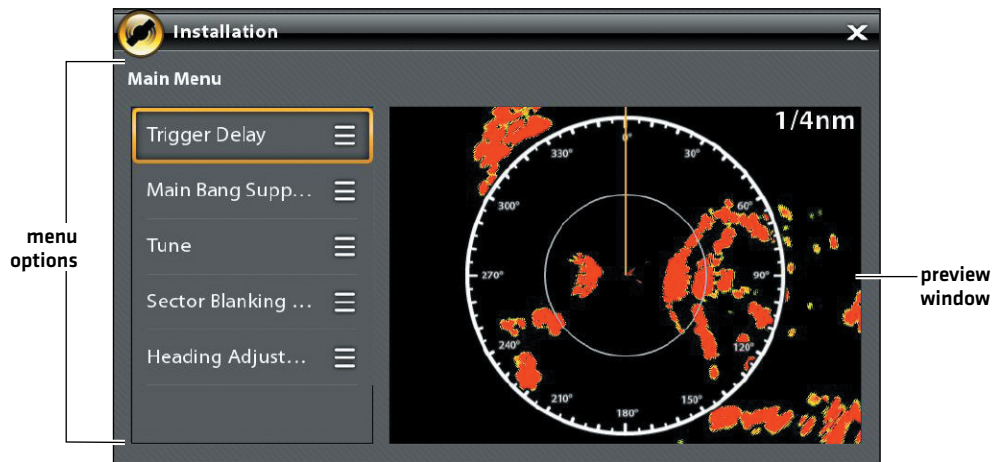


**CAUTION!** Before the radar settings are adjusted, or before the APEX/SOLIX software are updated or restored to system defaults, export the radar installation settings. See **Export Radar Installation Settings**.

### Open the Radar Installation Menu

1. Press the HOME key.
2. Select Settings.
3. Select Radar > Installation.

Radar Installation Menu



### Trigger Delay

Trigger delay adjusts the signal timing so that long straight targets appear straight on the display. The Range and Rain Clutter (FTC) are temporarily adjusted to optimize the system settings. When the Trigger Delay installation setting is completed, the system will return to the previous user settings.

1. Select Trigger Delay from the Installation menu.
2. **Trigger Delay:** Press and hold the slider, or press and hold the ENTER key, to adjust the trigger delay. A high setting sets a longer delay, while a low setting sets the radar to a shorter delay.



3. **Gain:** Turn the Rotary dial to adjust the gain. The gain controls the amplification of the radar signal.
4. **Close:** Tap the Back icon, or press the EXIT key.

## Main Bang Suppression

Set the Main Bang Suppression to create a range around the vessel, or the center of the radar pane, where the radar signal will be suppressed. The targets in this range will not be seen.

**⚠ WARNING!** Targets in the Main Bang Suppression Range are not displayed on the Radar View.

1. Select Main Bang Suppression from the Installation menu.
2. **Main Bang Suppression:** Press and hold the slider, or press and hold the ENTER key, to adjust the Main Bang Suppression range. A high setting sets a wider radius around the vessel and scanner, while a low setting limits the radius to a shorter range.
3. You can also adjust the following optional settings:
  - Gain** controls the amplification of the radar signal.
  - Sea Clutter** adjusts the filter that controls the amount of clutter on the view caused by rough sea conditions.
  - Rain Clutter** adjusts the filter that controls the amount of clutter on the view caused by rain or snow.
4. **Close:** Tap the Back icon, or press the EXIT key.

## Tune the Radar

The technician can tune the radar automatically [Auto Tune] or enter specific settings manually [Manual Tune]. Tuning is used to optimize the radar system settings. For best results, run the tuning while there are targets within range, so it will be easier to review the data and make adjustments.

**⚠ WARNING!** The radar should only be tuned under very limited circumstances. Contact Humminbird Technical Support at **1-800-633-1468** before tuning the radar.

1. Select Tune from the Installation menu.
2. Select Auto Tune or Manual Tune.
  - Auto Tune:** When you select Auto Tune, the control head stops radar transmission and starts automatic radar tuning.
  - Manual Tune:** Select Coarse Adjustment or Fine Adjustment. Press and hold the slider, or press and hold the ENTER key, to adjust the settings.
3. **Close:** Tap the Back icon, or press the EXIT key.

### Setting the Sector Blanking Range



## Set the Sector Blanking Range

Sector Blanking sets an area where the radar will not scan. This setting is useful for preventing reflections or false echoes from displaying on the Radar View; however, any targets within this range are not displayed on the screen.



**WARNING!** Targets in the Sector Blanking Range are not displayed on the Radar View.

1. Select Sector Blanking from the Installation menu.
2. Select Sector Start. Press and hold the slider, or turn the Rotary dial, to set the start of the sector range.
3. Select Confirm. Tap the menu, or press the ENTER key.
4. Select Sector End. Press and hold the slider, or turn the Rotary dial, to set the end of the sector range.
5. Select Confirm. Tap the menu, or press the ENTER key.
6. Tap the Back icon, or press the EXIT key.

## Adjust the Heading Line

Use the Heading Line setting to synchronize the on-screen heading with the actual vessel heading so that north is displayed correctly on the view.

1. Select Heading Adjustment from the Installation menu.
2. Press and hold the slider, or turn the Rotary dial, to adjust the heading line.
3. Tap the Back icon, or press the EXIT key.



**WARNING!** Humminbird is not responsible for the loss of data files (waypoints, routes, tracks, groups, snapshots, recordings, etc.) that may occur due to direct or indirect damage to the unit's hardware or software. It is important to back up your control head's data files periodically. Data files should also be saved to your PC before restoring the unit's defaults or updating the software. Visit our Web site at [humminbird.com](http://humminbird.com) for details.

## Export Radar Installation Settings

1. Install a formatted SD card into the SD card slot.
2. Press the HOME key.
3. Select the Files tool.
4. Under Export, select Radar Installation.
5. Select a save location.

## Import Radar Installation Settings

1. Install a formatted SD card into the SD card slot.
2. Press the HOME key.
3. Select the Files tool.
4. Under Import, select Radar Installation.
5. Select the radar installation file.

# CONFIGURE THE CONTROL HEAD

Use the instructions in this section to review control head and network connections, select baud rates and NMEA 0183 Output sentences, and name the control heads and networks.

When the APEX/SOLIX control head equipment and accessories are installed, the Setup Guide provides the prompts to guide you through configuring the unit. When you attach new hardware to the control head after it has been configured, the unit will detect the new hardware and provide additional prompts to add the equipment to the system.

## System Info

### Review System Connections

Use the System Info dialog box to review control head information such as the software version and serial number. You can also review connection information for the equipment connected to the control head ports, and you can change the control head name.

1. Press the HOME key.
2. Select Settings.
3. Select Network.
4. Select System Info.

### System Info (APEX)

The screenshot shows the 'System Info' dialog box for an APEX control head. The dialog is titled 'System Info' and has a 'Total Time: 5 h' indicator with a close button (X). The main area lists various system parameters and their current status. Annotations with lines pointing to specific fields identify: 'control head information' (Model, Unit Name, Serial Number, IP Address, Software Version, MAC Address), 'network name' (Network Name), and 'control head ports and connection information' (Ethernet Port 1, Ethernet Port 2, Internal GPS, NMEA 0183 (1), NMEA 0183 (2), NMEA 2000, Transducer, MEGA 360 Imaging, Sonar Temp, Speed (Paddle Wheel), Aux Temp, HDMI IN, HDMI OUT, Master Unit). At the bottom, there is a 'Rename Unit' section with a checkmark icon and the text 'rename the control head'. Below this is a data display table with four columns: Depth, Voltage, Position, and Time/Date. The values shown are: Depth 44.4 ft, Voltage 13.6 V, Position N 26.48386° W 82.05662°, and Time/Date 2:06:30 AM 3/15/2019.

Model:	APEX 16 MSI+ CHARTPLOTTER	Serial Number:	200715221822
Unit Name:	200715221822	IP Address:	
Software Version:	3.897.(12/11/20 14:14)	MAC Address:	34:03:DE:FD:01:5C
Network Name:	NET:200715221822		
Ethernet Port 1:	Not Connected		
Ethernet Port 2:	Not Connected		
Internal GPS:	Not Connected		
NMEA 0183 (1):			
NMEA 0183 (2):			
NMEA 2000:	Not Connected		
Transducer:	Not Configured		
MEGA 360 Imaging:	V0.000 S/N: 00000000-0000		
Sonar Temp:	Not Connected		
Speed (Paddle Wheel):	Not Connected		
Aux Temp:	Not Connected		
HDMI IN:	Not Connected		
HDMI OUT:	Not Connected		
Master Unit:	---		


  

Depth	Voltage	Position	Time/Date
44.4 ft	13.6 V	N 26.48386° W 82.05662°	2:06:30 AM 3/15/2019

## System Info (SOLIX)

**System Info** Total Time: 138 h X

Model:	SOLIX 15 SI	Serial Number:	161014220315
Unit Name:	161014220315	IP Address:	169.254.8.241
Software Version:	2.950(1/27/17 16:35)	MAC Address:	74:DA:EA:08:B7:76
Network Name:	NET:161014220315		
Internal GPS:	Not Connected		
NMEA 0183 (1):			
NMEA 0183 (2):			
NMEA 2000:	Not Connected		
Transducer:	Not Configured		
Sonar Temp:	Not Connected		
Speed (Paddle Wheel):	Not Connected		
Aux Temp:	Not Connected		
Master Unit:	Radar		

Rename Unit 

Depth	Voltage	Position	Time/Date
45.6 ft	13 V	N 34°12.954' W 83°57.678'	1:40:04 PM 2/3/2017

Annotations:

- control head information
- network name
- control head ports and connection information
- rename the control head

### Change the Control Head Name

When a control head is part of a network, you can change its name so it is easy to identify as a source on the network.

1. From the System Info dialog box [above], select Rename Unit. Use the on-screen keyboard to change the control head name.
2. Select Save.

## Sensor Port Connections (GPS and NMEA 0183)

When equipment is connected to the control head, the equipment and its data will be detected automatically. You can also manually select data, set the data offset, baud rate, and NMEA output sentences from the Sensor Port submenus. The available menus are determined by the attached equipment.

1. Press the HOME key.
2. Select Settings.
3. Select Network.
4. Under Sensor Port, select a port menu.

**GPS Port:** If you've connected an external GPS or an external GPS/Heading Sensor to the control head, select the GPS Port. Use the GPS Port menu options to select the Sensor Type, Data Offset, and Pitch and Roll installation.

**NMEA 0183 [1] and [2]** allow you to change the data for Sensor Type, Data Offset, Baud Rate, and NMEA Output.

<b>Sensor Type</b>	Auto-Select is turned on as the default setting, and the available data from the attached sensor will be auto-selected with a check mark.  To change the selected data, turn off Auto-Select, and manually change the data by adding or removing a check mark. [check mark = selected]
<b>Data Offset</b>	To adjust the zero point of the attached sensor, select Data Offsets. Depending on the attached sensor, you can adjust the Depth Offset, Temperature Offset, Heading Adjustment, and STW [Speed Through Water] Calibration from this menu.  For example, select Depth Offset to adjust the digital depth readout to indicate the depth from the waterline or the boat's keel for the selected sensor.
<b>Baud Rate</b>	Select a baud rate for the selected port. [Auto, 4800, 9600, 38400; Default = Auto]
<b>NMEA Output</b>	Select NMEA Output sentences for the selected port. See the NMEA 0183 table on the following pages.



**NOTE:** To set up a NMEA 2000 network, see **Set up a NMEA 2000 Network**.



## NMEA 0183

Message	Description	Input	Output
AAM	Waypoint Arrival Alarm		•
APB	Heading/Track Controller [Autopilot] Sentence "B"		•
BOD	Bearing-Origin to Destination		•
BWC	Bearing & Distance to Waypoint - Great Circle		•
BWR	Bearing & Distance to Waypoint - Rhumb Line		•
DBT	Depth Below Transducer	•	•
DPT	Depth	•	•
GGA	Global Positioning System Fix Data	•	•
GLL	Geographical Position - Latitude/Longitude	•	•
GNS	GNSS Fix Data	•	•
GSA	GNSS DOP and Active Satellites	•	•
GSV	GNSS Satellites In View	•	•
HDG	Heading, Deviation & Variation	•	•
HDM	Heading, Magnetic	•	•
HDT	Heading, True	•	
MTW	Water Temperature	•	•
MWD	Wind Direction & Speed	•	
MWV	Wind Speed & Angle	•	
RMB	Recommended Minimum Navigation Information		•
RMC	Recommended Minimum Specification GNSS Data	•	•
ROT	Rate of Turn	•	•
VBW	Dual Ground/Water Speed	•	
VDM	AIS VHD Data Link [Other Vessels]	•	
VDO	AIS VHD Data Link [Own Vessel]	•	
VHW	Water Speed and Heading	•	•
VTG	Track Made Good & Ground Speed		•
XDR	Transducer Measurements	•	
XTE	Cross-Track Error, Measured		•
ZDA	Time & Date	•	•

### Configure the NMEA Talker ID

Use the following instructions to change the NMEA 0183 Talker ID to match the NMEA 0183 installed accessory.

1. Press the HOME key.
2. Select Settings > Network.
3. Under Sensor Port, select a NMEA port menu.
4. Select NMEA Output.
5. Under Configure NMEA Talker ID, select IN-Integrated Navigation [Default] or GP-Global Positioning System.

## Set up Autopilot

If you are using a separate-purchase Humminbird autopilot [SC 110] with the APEX/SOLIX control head, it is important to review the following:

- Read the autopilot manual completely so you understand the installation and operation requirements before you use the equipment.
- There are many safety precautions that must be considered before you use the equipment. See the autopilot manual for more information.
- When you initiate navigation from the control head, there are certain controls that are NOT available on the autopilot. See the autopilot manual for more information.



**WARNING!** The autopilot system should be installed and configured by a Certified Marine Electronics Technician (CMET) or an authorized Marine Electronics Installer (MEI). See [NMEA.org](http://NMEA.org) for details. Incorrect installation may affect the system's performance, which affects the safety of the vessel and its passengers. Refer to the installation guide included with the autopilot. If you have questions about the installation, please contact Humminbird Technical Support.

## Set up Autopilot

Use the following instructions to set up Autopilot on the APEX/SOLIX control head.

1. Select the control head that has the autopilot connected to it.
2. Press the HOME key.
3. Select Settings.
4. Select Network.
5. Under Sensor Port, select the port that is connected to the autopilot [NMEA 0183 [1], or NMEA 0183 [2]].
6. Select NMEA Output. Tap the on/off button, or press the ENTER key, to turn it on.
7. Under AutoPilot, select APB. Tap the check box, or press the ENTER key, to add a check mark to it.
8. To enable all modes of the SC 110 with the APEX/SOLIX control head, select the NMEA Output sentences as shown in the following table.

<b>Multisensor</b>	RMC or VTG
<b>Standby</b>	n/a
<b>Auto</b>	n/a
<b>Auto-Track</b>	GGA or GLL or RMC
<b>Nav</b>	APA or APB or BOD + RMB or BOD + XTE or BOD + XTR
<b>Wind</b>	MWV or VWR



**NOTE:** See the SC 110 manual and the SCP 110 manual for details. To download the manuals, visit our Web site at [humminbird.com](http://humminbird.com).

9. Press the EXIT key to return the previous menu.
10. Select Baud Rate. Select 4800.
11. Go to the Autopilot section of this manual to enable autopilot navigation with the control head.

# SET UP A NMEA 2000 NETWORK

---

Use the instructions in this section if a NMEA 2000 network is connected to the control head.

When equipment is connected to the control head, the equipment and its data will be detected automatically. You can also manually select equipment and set the data offset. The available menus are determined by the attached equipment.



**NOTE:** Humminbird recommends that the NMEA 2000 network be installed by a certified NMEA 2000 technician. See [NMEA.org](http://NMEA.org) for details.

## Preparation

The NMEA 2000 network connects to the NMEA 2000 port on one control head. If you have a multi-control head network, select the control head that is connected to the NMEA 2000 network backbone to proceed with the following instructions.

## Open the NMEA 2000 Sensor Port Menu

1. Press the HOME key.
2. Select Settings.
3. Select Network.
4. Under Sensor Port, select NMEA 2000.

## Turn on the NMEA 2000 Network

1. From the NMEA 2000 Sensor port menu, select NMEA 2000 Network.
2. Tap the on/off button, or press the ENTER key, to turn it on.

## Select NMEA 2000 Devices Manually (optional)

When equipment is connected to the control head, the equipment and its data will be detected automatically. Use the instructions in this section to manually select devices to use on the NMEA 2000 network. See the illustrations on the following pages.

1. From the NMEA 2000 Sensor port menu, select NMEA 2000 Devices.
2. Select Auto-Select. Tap the on/off button, or press the ENTER key, to turn it off.
3. Select devices to add to the NMEA 2000 network. [check mark = included, blank = not included]

### NMEA 2000 Network Devices Selected Manually

The screenshot shows the 'NMEA 2000 Devices' settings page. The 'Auto-Select' toggle is turned off. A list of detected devices is shown below, with checkboxes for selection. The 'GH2183' and 'WSO100' devices are checked, while 'DST100' and 'TLM100' are not. A callout points to the 'OFF' toggle with the text 'Turn off Auto-Select'. Another callout points to the checked boxes for 'GH2183' and 'WSO100' with the text 'selected device'. A third callout points to the unchecked boxes for 'DST100' and 'TLM100' with the text 'devices detected but not selected'.

Device	Selected
GH2183	Yes
WSO100	Yes
DST100	No
TLM100	No

### NMEA 2000 Network Devices Selected Automatically

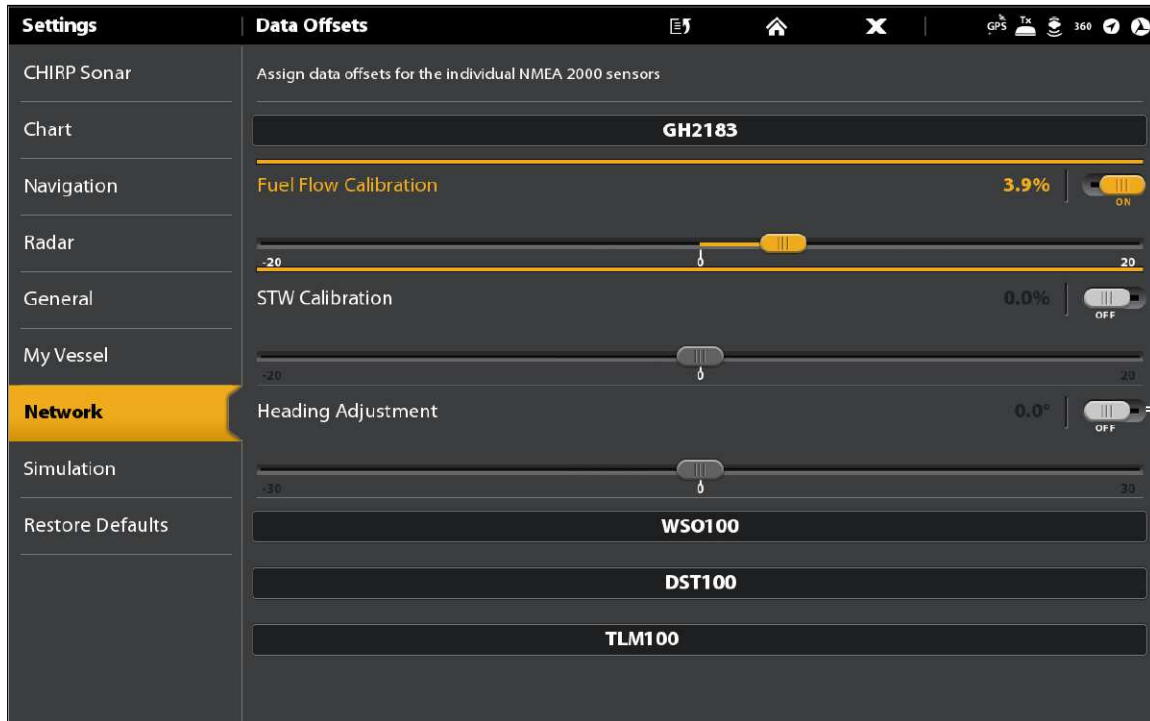
The screenshot shows the 'NMEA 2000 Devices' settings page. The 'Auto-Select' toggle is turned on. All detected devices ('GH2183', 'WSO100', 'DST100', and 'TLM100') have their checkboxes checked. A callout points to the 'ON' toggle with the text 'Turn on Auto-Select'. Another callout points to the checked boxes for all four devices with the text 'devices detected and selected on the NMEA 2000 network'.

Device	Selected
GH2183	Yes
WSO100	Yes
DST100	Yes
TLM100	Yes

## Set NMEA 2000 Data Offsets

1. From the NMEA 2000 Sensor port menu, select Data Offsets.
2. Select a device.
3. Tap the on/off slider, or press the ENTER key, to turn it off.
4. Press and hold the slider, or press and hold the ENTER key, to set the offset amount.

### NMEA 2000 Data Offset



Turn off the slider to manually adjust the data offset.



## NMEA 2000 Messages (PGN)

The following NMEA 2000 input/output messages are available when NMEA 2000 is turned on and the related NMEA 2000 equipment is detected and selected as a source.

Message (PGN)	Description	Input	Output
059392	ISO Acknowledgement	▪	▪
059904	ISO Request	▪	▪
060928	ISO Address Claim	▪	▪
126208	NMEA - Command/Request/Acknowledge Function	▪	▪
126464	Receive/Transmit PGN List Group Function	▪	▪
126992	System Time	▪	
126996	Product Information	▪	▪
127245	Rudder	▪	
127250	Vessel Heading	▪	
127251	Rate of Turn	▪	
127488	Engine Parameters, Rapid Update	▪	
127489	Engine Parameters - Dynamic	▪	
127497	Trip Parameters, Engine	▪	
127505	Fluid Level	▪	
128267	Water Depth	▪	
129026	COG & SOG, Rapid Update	▪	
129029	GNSS Position Data	▪	
129033	Time & Date	▪	
129283	Cross Track Error	▪	
129284	Navigation Data	▪	
129285	Navigation - Route/WP Information	▪	
129539	GNSS DOPs	▪	
129540	GNSS Sats in View	▪	
130052	Loran C TD Data	▪	
130306	Wind Data	▪	
130310	Environmental Parameters	▪	
130311	Environmental Parameters	▪	
130312	Temperature	▪	
130313	Humidity	▪	
130314	Actual Pressure	▪	
130576	Small Craft Status	▪	

## NMEA 2000 AIS Messages (PGN)

The following NMEA 2000 input/output messages are available when NMEA 2000 is turned on and an AIS is detected and selected as a source on the NMEA 2000 network.

Message (PGN)	Description	Input	Output
129038	Class A Position Report	▪	
129039	Class B Position Report	▪	
129809	AIS Class B Static Data, Part A	▪	
129810	AIS Class B Static Data, Part B	▪	

## Set up NMEA 2000 Engine Sources

When a NMEA 2000 Engine is connected to the NMEA 2000 network, it is detected by the control head. The control head will provide prompts to set up engines in the system. The control head assigns a number to each engine. The sources are numbered lowest to highest, where 0 [zero] is the lowest and first source identified. You can use the sources identified by the control head, or you can manually assign an engine to each source number.

For example, Engine 1 reports data from the engine identified as the number 0 Instance in installation [typically the engine located on the port side of the boat towards the bow], and Engine 2 is the engine identified as the number 1 instance in installation [typically the engine located on the starboard side of the boat towards the keel].



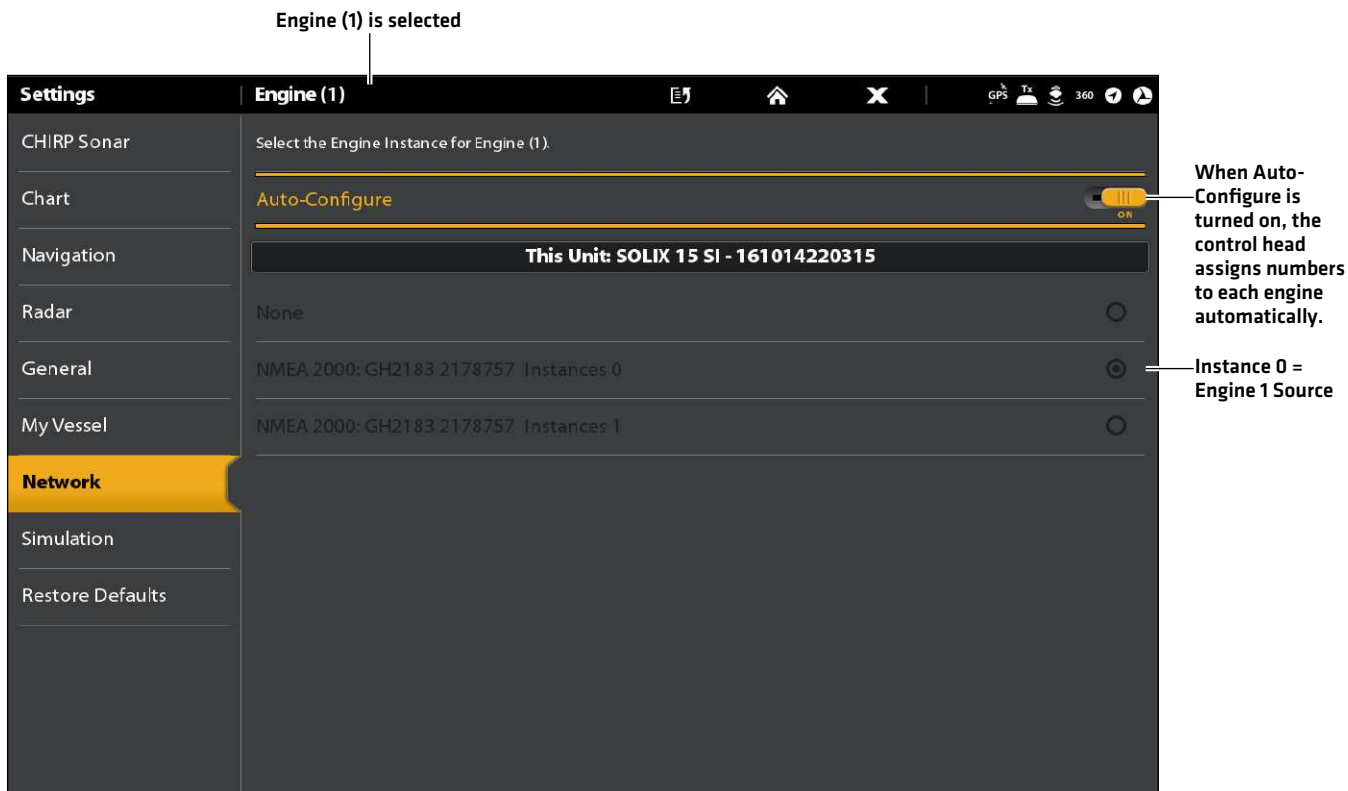
**NOTE:** See **Views: Set up an Instrument View** to set up the instrument views for your engine data.

## Set up the Number of Engines

The number of engines and tanks are entered using the Setup Guide during initial installation. Use the instructions in this section to change the number of engines and tanks displayed on the control head.

1. Press the HOME key.
2. Select Settings.
3. Select My Vessel.
4. Select Engines/Tanks.
5. Select the total number of engines and fuel tanks on your boat.

## Engine 1 Source Auto-Configured



### Change the Engine Source Assignments

The instructions in this section are optional and allow you to change which engine is assigned as the Engine 1, Engine 2, or Engine 3 source in the control head.

1. Press the HOME key.
2. Select Settings.
3. Select Network.
4. Select Data Sources.
5. Under Engine Data, select Engine 1, Engine 2, or Engine 3.
6. Turn off Auto-Configure.
7. Select an Engine from the list.

## Set up Fuel Tanks

The Setup Guide provides prompts to set up the fuel tanks in the system, and it assigns a source number to each fuel tank. If a NMEA 2000 fuel tank sensor and a fuel flow rate sensor are installed, the control head can display fuel levels automatically. If only a fuel flow rate sensor is installed, you need to set up the fuel tanks manually to manage fuel levels.

### Set up the Number of Tanks

The number of engines and tanks are entered using the Setup Guide during initial installation. Use the instructions in this section to change the number of engines and tanks displayed on the control head.

1. Press the HOME key.
2. Select Settings.
3. Select My Vessel.
4. Select Engines/Tanks.
5. Select the total number of engines and fuel tanks on your boat.

If you do not have a NMEA 2000 fuel tank sensor, proceed to **Set the Fuel Tank Capacity**.

### Set the Fuel Tank Capacity

If there is a fuel flow rate sensor installed, but not a NMEA 2000 fuel tank sensor, use the instructions in this section to set up fuel tank data manually. You can also use these instructions to confirm Automatic Fuel Management Mode if you have a NMEA 2000 fuel tank sensor and a fuel flow rate sensor installed.

1. Set up the number of fuel tanks on the boat. See **Set up the Number of Tanks**.
2. Press the HOME key.
3. Select the Fuel tool.
4. Select Settings.
5. Select Manual.



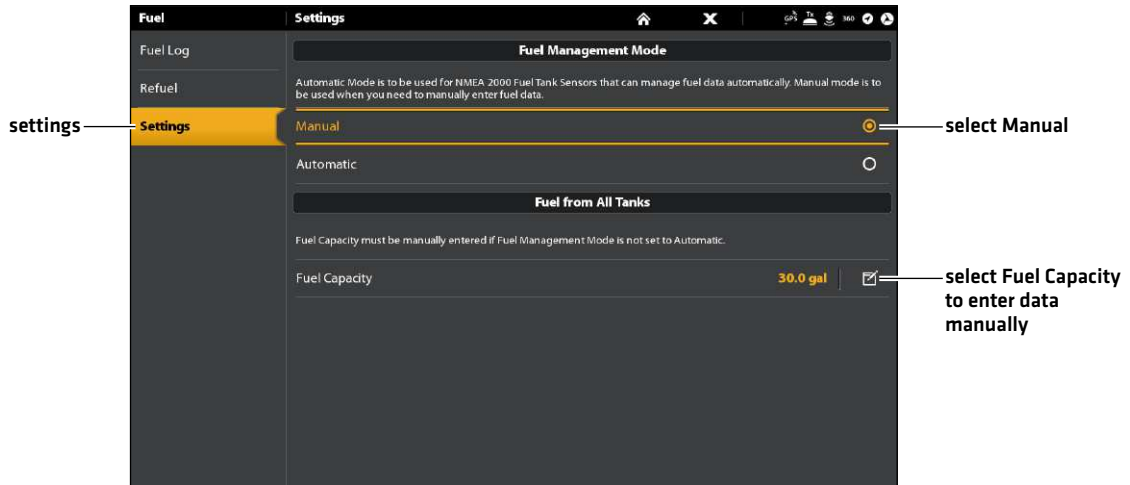
**NOTE:** If NMEA 2000 fuel tank sensor and a fuel flow rate sensor are installed, select Auto to automatically detect the tank capacity.

6. Select Fuel Capacity.
7. Use the on-screen keyboard to enter the total fuel capacity of the tank.

If there is more than one tank on the boat, indicate the total amount of fuel from all tanks.

8. Select Save.

## Setting up Fuel Tanks Manually



## Displaying the Fuel Tool



### Open the Fuel Tool

1. Press the HOME key.
2. Select the Fuel tool.

### Refill the Tank(s)

The menu options in this section are determined by the Fuel Management Mode [Manual or Automatic]. See **Set the Fuel Tank Capacity** for more information.

1. Open the Fuel tool, and select Refuel.
2. **To fill the tank to the top**, select Fill Up or Reset Fuel Used.

**To add an amount to the tank**, select Add Fuel. Use the on-screen keyboard to enter the amount and save it.

## Change the Fuel Tank or Fuel Flow Source Assignments

The instructions in this section are optional and allow you to change which fuel tank is assigned as the Tank 1, Tank 2, or Tank 3 source in the control head. You can also use these instructions to change the fuel flow rate Sensors (Fuel Flow) assignments. The menu options are determined by the type of sensors installed.

1. Press the HOME key.
2. Select Settings.
3. Select Network.
4. Select Data Sources.
5. Under Fuel Data, select Tank 1, Tank 2, or Tank 3.  
If fuel flow rate sensors are installed, select Fuel Flow - Engine 1, 2, or 3.
6. Turn off Auto-Configure.
7. Select a fuel tank from the list.



# SET UP YOUR HUMMINBIRD NETWORK

When the Humminbird network is fully installed, configure the network so the control heads and equipment are synchronized across the network. Depending on your network configuration, your options may include sources from remote control head(s), NMEA 0183, Ethernet, and NMEA 2000.

Use the instructions in this section to complete the following network setup requirements:

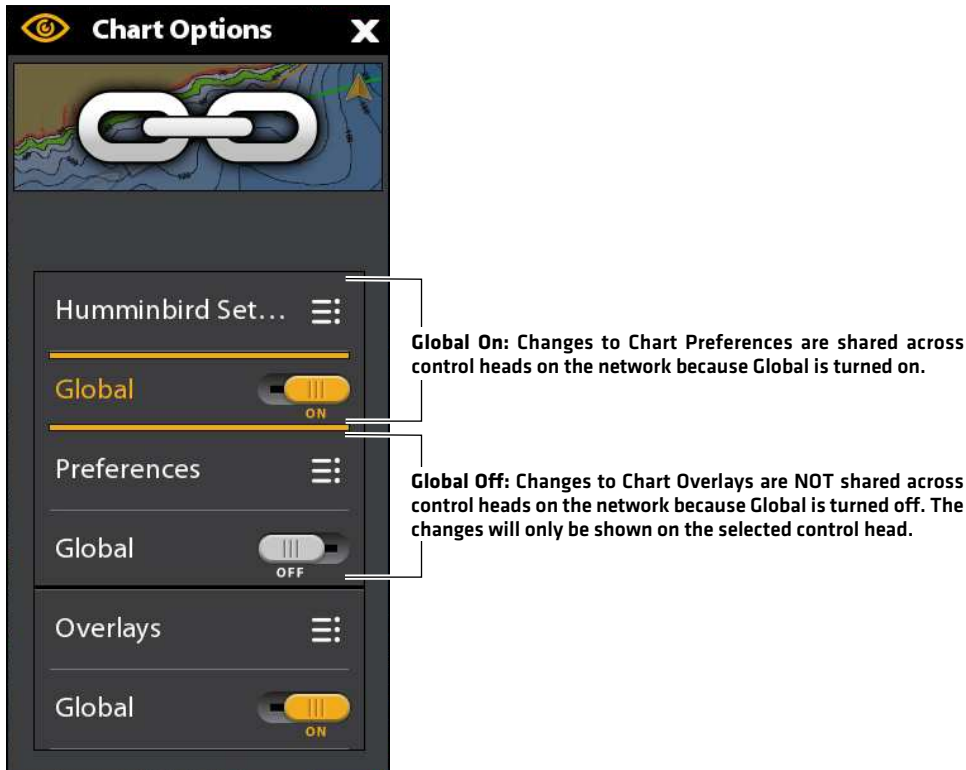
1. Configure a new network.
2. Select transducers from the network.
3. Change GPS sources.
4. Select data sources.
5. Set vessel display settings.

## Understand Global

When you configure a new network, the control heads are synchronized. Settings such as alarms, map sources, favorite views, preferences, overlays, sonar sources, and GPS sources are shared across control heads.

Many menu settings include the Global on/off button. **When Global is turned on**, the selected menu setting on the control head is shared with the other control heads in the network.

**When Global is turned off**, the selected menu setting is only available on the selected control head.



## Understand Auto-Configure

When you configure the control head network, the control head automatically selects a source for each category. For example, if there are multiple heading sensors attached, the control head will choose one sensor to provide the heading. If you prefer a different sensor to provide the heading, you can manually select a different heading sensor.

The Auto-Configure on/off button is displayed in each source category. **When Auto-Configure is turned on**, the sources are selected automatically by the control head. **When Auto-Configure is turned off**, you can select sources based on your preferences.

## 1 | Configure a New Network

Use the instructions in this section if you have more than one Humminbird control head connected to the network. Configuring the network synchronizes the control head settings.

**If there is only one control head on the network, skip this section. Proceed to section 2: *Select Sonar Sources*.**

### Preparation

1. Confirm all control heads and network equipment are powered on.
2. Designate one control head as the main control head. Ideally, you've used the main control head, and it has been set up with your favorite view settings, menu preferences, and more. The other control heads in the network will synchronize to the main control head.  
**If this is a first-time configuration for all control heads**, no additional actions are required. Proceed to ***Configure the Network***.
3. **Global:** If there are any settings you'd like to keep on a control head, and not share globally, make sure the Global menu on that setting is turned off.
4. **Navigation data:** navigation data will be synchronized. To export navigation data from a control head and save it, export the data to an SD card. See ***Manage your Navigation Data***.
5. **Export Menu Settings:** When control heads are synchronized to a main unit, their menu settings are changed to match the main unit. To save menu settings from a selected remote control head, export the menu settings to an SD card [see ***Update Software***].

### Configure the Network

1. On the main control head, press the HOME key.
2. Select Settings.
3. Select Network.
4. Select Configure New Network.
5. Select Sync Network.

## 2 | Select Sonar Sources

When a transducer is first connected to the control head or network (through black box sonar or additional Humminbird control heads), it will be detected by all control heads in the network. The APEX/SOLIX control head selects the transducer connected to it as the primary sonar source. The APEX/SOLIX control head is compatible with black box sonar to expand its sonar capabilities. See [humminbird.com](http://humminbird.com) for transducer configuration options.



**NOTE:** Humminbird has provided the best setting for your unit. You can use the settings included with your control head, or you can adjust these advanced options.

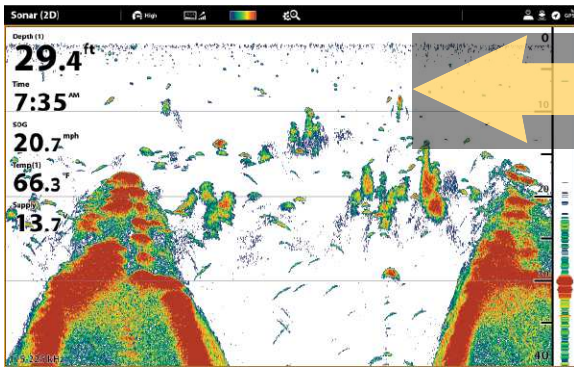
### Open the Sonar Source Menu

1. Press the HOME key.
2. Select Settings.
3. Select Sonar.
4. Select Sonar Source.

## Sonar Source Overview

When the network is configured, you can select any transducer from the network to provide the sonar data on the control head. The sonar sources can be shared between control heads or you can use individual sonar sources on each control head.

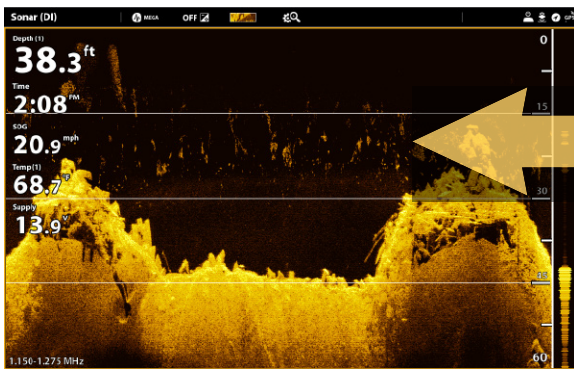
**The transducer you select on the 2D Sonar tab will provide the data for the 2D Sonar Views and related digital readouts.**



A screenshot of the 'Sonar Source Select' menu. The '2D Sonar' option is selected and highlighted in yellow. The menu is organized into three columns: 2D Source, 2D Pinging, and Transducer Setting. The 2D Source column shows 'SOLIX 12 SI' selected with a radio button. The 2D Pinging column shows 'MED/HIGH' selected with a radio button and a 'ON' toggle. The Transducer Setting column shows '2D + DI + SI' selected with a radio button and a 'ON' toggle.

	2D Source	2D Pinging	Transducer Setting
2D Sonar	<input checked="" type="radio"/> SOLIX 12 SI	<input checked="" type="radio"/> MED/HIGH ON	<input checked="" type="radio"/> 2D + DI + SI ON
Down Imaging	<input type="radio"/> SOLIX 12 SI	<input type="radio"/> MED/HIGH ON	<input type="radio"/> 2D + DI + SI ON
Side Imaging	<input type="radio"/> SOLIX 12 SI	<input type="radio"/> MED/HIGH ON	<input type="radio"/> 2D + DI + SI ON
360 Imaging	<input type="radio"/> 360 Imaging 15071222777	<input type="radio"/>	<input type="radio"/>

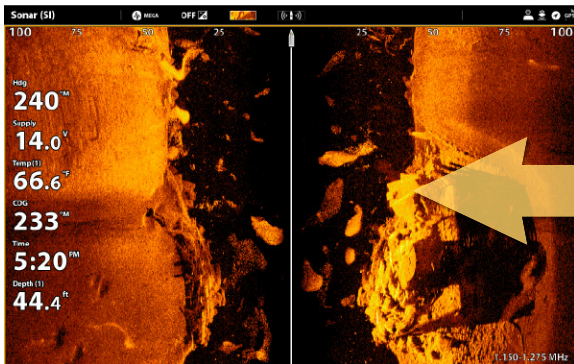
**The transducer you select on the Down Imaging tab will provide the data for the Down Imaging Views and related digital readouts.**



A screenshot of the 'Sonar Source Select' menu. The 'Down Imaging' option is selected and highlighted in yellow. The menu is organized into three columns: DI Source, DI Pinging, and Transducer Setting. The DI Source column shows 'SOLIX 12 SI' selected with a radio button. The DI Pinging column shows '455/800/MEGA' selected with a radio button and a 'ON' toggle. The Transducer Setting column shows '2D + DI + SI' selected with a radio button and a 'ON' toggle.

	DI Source	DI Pinging	Transducer Setting
2D Sonar	<input type="radio"/> SOLIX 12 SI	<input type="radio"/> 455/800 ON	<input type="radio"/> 2D + DI + SI ON
Down Imaging	<input checked="" type="radio"/> SOLIX 12 SI	<input checked="" type="radio"/> 455/800/MEGA ON	<input checked="" type="radio"/> 2D + DI + SI ON
Side Imaging	<input type="radio"/> SOLIX 12 SI	<input type="radio"/> 455/800/MEGA ON	<input type="radio"/> 2D + DI + SI ON
360 Imaging	<input type="radio"/> 360 Imaging 15071222777	<input type="radio"/>	<input type="radio"/>

**The transducer you select on the Side Imaging tab will provide the data for the Side Imaging Views and related digital readouts.**



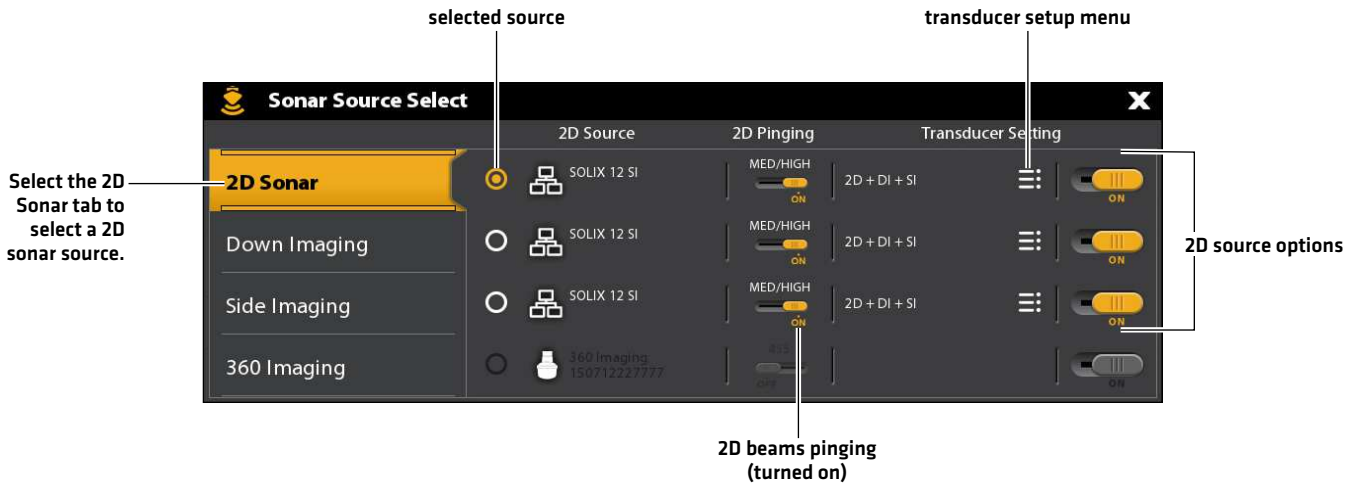
A screenshot of the 'Sonar Source Select' menu. The 'Side Imaging' option is selected and highlighted in yellow. The menu is organized into three columns: SI Source, SI Pinging, and Transducer Setting. The SI Source column shows 'SOLIX 12 SI' selected with a radio button. The SI Pinging column shows '455/800/MEGA' selected with a radio button and a 'ON' toggle. The Transducer Setting column shows '2D + DI + SI' selected with a radio button and a 'ON' toggle.

	SI Source	SI Pinging	Transducer Setting
2D Sonar	<input type="radio"/> SOLIX 12 SI	<input type="radio"/> 455/800 ON	<input type="radio"/> 2D + DI + SI ON
Down Imaging	<input type="radio"/> SOLIX 12 SI	<input type="radio"/> 455/800 ON	<input type="radio"/> 2D + DI + SI ON
Side Imaging	<input checked="" type="radio"/> SOLIX 12 SI	<input checked="" type="radio"/> 455/800/MEGA ON	<input checked="" type="radio"/> 2D + DI + SI ON
360 Imaging	<input type="radio"/> 360 Imaging 15071222777	<input type="radio"/>	<input type="radio"/>

## Select Sonar Sources

Use the instructions in this section to assign sonar sources to each control head. The sonar sources can be shared between control heads or you can use different sonar sources on each control head.

- From the Sonar Source Menu, select the first tab. In the following illustration, the first tab is 2D.



- Select the transducer connection location. The connection locations are displayed as follows:



**Selected Control Head [Local]:** the control head you are actively using



**Remote Control Head:** additional control heads connected to the network



**Black Box Sonar**

- Repeat steps 1 and 2 for each tab. You can select one sonar source on each tab.

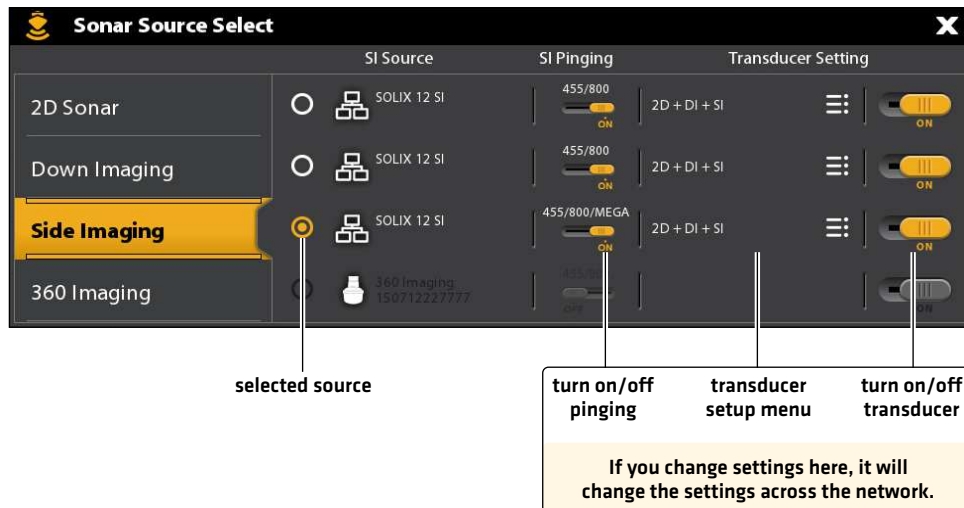


**NOTE:** The list is determined by the connected equipment on the network and the transducer type. DualBeam PLUS sonar sources will only be displayed on the 2D tab, Down Imaging sources will only be displayed on the Down Imaging tab, etc.



**NOTE:** If you have installed an accessory transducer, and it is not displayed in the transducer list, see **Installation Information: Set up or Change Transducer Settings.**

When you turn on/off pinging or change the transducer settings, all control heads sharing the transducer are affected.



### 3 | Select GPS Sources (optional)

The APEX/SOLIX control head defaults to the internal GPS receiver as the primary source [GPS [1]]. If you connect an external GPS receiver to the control head, it will be assigned as the secondary source GPS [2].

If you connect an external GPS receiver to the control head, it will be assigned as the primary source GPS [1].

**GPS [1]** provides position data, Speed over Ground [SOG], Course over Ground [COG], waypoints, routes, tracks, and navigation calculations to the control head.

**GPS [2]** provides position data that is displayed in the GPS [2] data box.

You can also manually change which GPS receiver is the selected source for GPS [1] or GPS [2]. For example, if you've connected an external GPS receiver to the APEX/SOLIX control head, you can assign it to GPS [1], so the control head will use it as the primary source [instead of the internal GPS receiver]. If the control head is part of an Ethernet or NMEA 2000 network, you can also select the GPS receivers from the network.

#### Open the GPS Tool

1. Press the HOME key.
2. Select the GPS tool.

#### Select GPS Sources Automatically

1. Under GPS Source, select GPS [1] or GPS [2].
2. Select Auto-Configure. Tap the on/off button, or press the ENTER key, to turn it on.

#### Select GPS Sources Manually

Use the instructions in this section to manually select a GPS source.

1. Under GPS Source, select GPS [1] or GPS [2].
2. Select Auto-Configure. Tap the on/off button, or press the ENTER key, to turn it off.
3. Select a GPS receiver from the list.

#### Share GPS Sources with the Network

1. Under GPS Source, select Global Source.
2. Tap the on/off button, or press the ENTER key, to turn it on.



**NOTE:** See **Set up your Humminbird Network** for details about Global On/Off.

## 4 | Select Data Sources (optional)

When the network has been configured, you can choose sources from the entire network. Depending on your network configuration, your options may include sources from remote control head(s), NMEA 0183, Ethernet, and NMEA 2000. Sources are shared across the network. In some situations, sources can be individualized for each control head. For example, Control Head A can use one transducer and Control Head B can use a different transducer.

**Auto-Configure:** The Auto-Configure on/off button is displayed in each source category. When Auto-Configure is turned on, the sources are selected automatically by the control head. When Auto-Configure is turned off, you can select sources based on your preferences.

For example, if there are multiple heading sensors attached, the control head network will choose one sensor to provide the heading. If you prefer a different sensor to provide the heading, you can manually assign a different heading sensor as the selected source.

### Select Sources Automatically (default)

Auto-Configure is turned on by default, so the instructions in this section are only necessary if you've manually changed the source selection and want to return to a source being chosen automatically.

1. Press the HOME key.
2. Select Settings.
3. Select Network.
4. Select Data Sources.
5. Select a Data Category, and select the data type under that category.
6. Select Auto-Configure. Tap the on/off button, or press the ENTER key, to turn it on.

### Select Sources Manually (optional)

Use the instructions in this section to manually select a source.

1. Press the HOME key.
2. Select Settings.
3. Select Network.
4. Select Data Sources.
5. Select a Data Category, and select the data type under that category.
6. Select Auto-Configure. Tap the on/off button, or press the ENTER key, to turn it off.
7. Select a source from the list.



## CHANGE THE NETWORK NAME

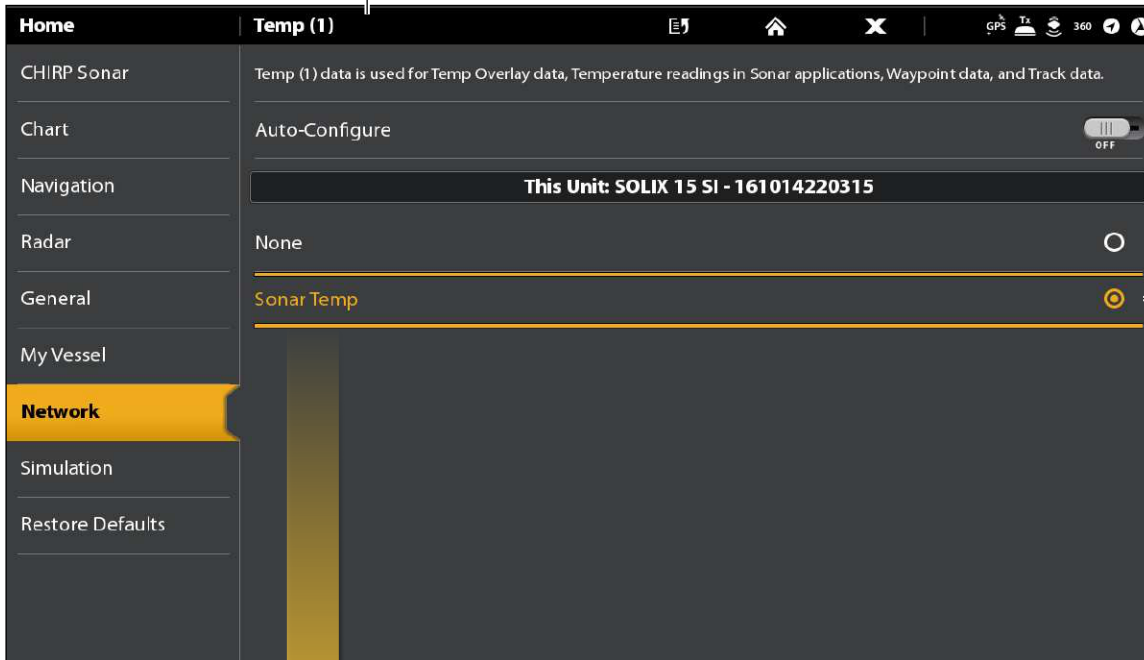
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The Network Info menu allows you to name each network so it is easy to identify in the system. You can also review network information from the dialog box.

1. Press the HOME key.
2. Select Settings.
3. Select Network.
4. Select Network Info.
5. Select Rename Network. Use the on-screen keyboard to change the control head name.
6. Select Save.

## Manually Selecting a Source for Temp [1]

Temp (1) is selected

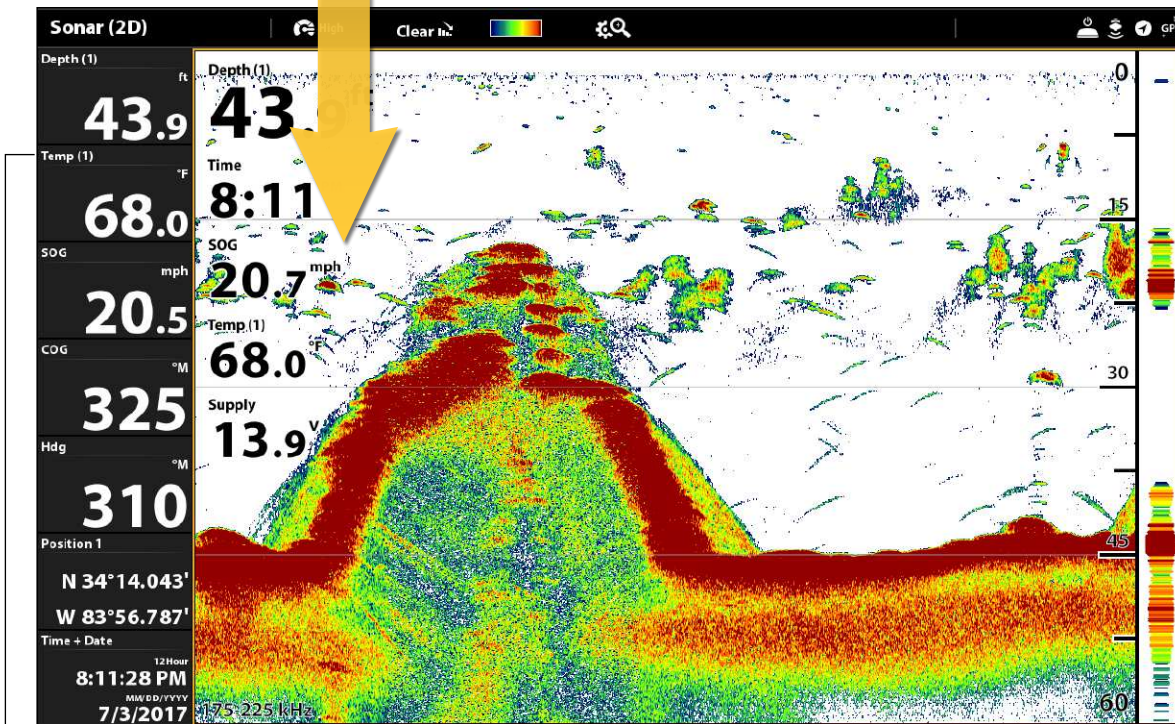


information about the selected source

When Auto-Configure is turned off, you can manually select a source.

selected source assigned to Temp (1)

The sources you select will provide the data for the related digital readouts and more, depending on your selection. In the illustration above, see *Information about the Selected Source*.



The Temp 1 digital readout data is provided by the Temp (1) source.

# MANAGE YOUR CONTROL HEAD

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Many of the control head settings can be accessed from the Settings tool [General Menu] or from the Power X-Press Menu in the status bar.

## Open the Settings Tool

1. Press the HOME key.
2. Select Settings.
3. Select General.

## Open the Power X-Press Menu

Many of the control head settings can be accessed quickly from the Power X-Press Menu. You can also turn off Radar transmission or change the transducer source from this menu.

1. Tap the top, right corner of the status bar.

**OR**

Press the POWER key.

## Adjust Lighting

The lighting menus can be accessed from the Settings tool [General Menu] or the Power X-Press Menu. The following instructions use the Power X-Press Menu.

### Adjust the Backlight

1. Open the Power X-Press Menu.
2. Select Backlight.
3. Press and hold the slider, or turn the Rotary dial, to adjust the setting.

### Turn on/off Night Mode

1. Open the Power X-Press Menu.
2. Select Night Mode.
3. Tap the on/off button, or press the ENTER key.

## Change Touch Screen and Key Sounds

### Turn on/off Touch Screen


1. Press the POWER key twice.
- OR**
1. Open the Power X-Press Menu.
  2. Select Touch Screen.
  3. Tap the on/off button, or press the ENTER key.

## Turn on/off Key Sounds

1. Press the HOME key.
2. Select Settings.
3. Select General.
4. Select Key Sounds.
5. Tap the on/off button, or press the ENTER key.

## Import/Export Files

It is important to back up your data files periodically. Data files should also be saved to your PC before restoring the unit's defaults or updating software.

 **WARNING!** Humminbird is not responsible for the loss of data files (waypoints, routes, tracks, groups, snapshots, recordings, etc.) that may occur due to direct or indirect damage to the unit's hardware or software. It is important to back up your control head's data files periodically. Data files should also be saved to your PC before restoring the unit's defaults or updating the software. Visit our Web site at [humminbird.com](http://humminbird.com) for more information.

Use the following instructions to save your menu settings. To import or export navigation data, see *Manage your Navigation Data*. To export your Radar installation settings, see *Installation Information: Configure Humminbird Radar*.

### Import Files

1. Install the SD card with the files into the control head port.
2. Press the HOME key.
3. Select the Files tool.
4. Under Import, select Menu Settings.
5. Follow the on-screen prompts to select a file and import it.

### Export Files

1. Install the SD card with the files into the control head port.
2. Press the HOME key.
3. Select the Files tool.
4. Under Export, select Menu Settings.
5. Follow the on-screen prompts.
6. **Select a Save Location:** Select the port where the SD card is installed.

# SPECIFICATIONS

The following sections contain the product specifications for the APEX and SOLIX control head and the [included] transducer. The sections are divided between APEX models and G1 [first generation], G2 [second generation] and G3 [third generation] SOLIX models.

For additional information about your product and/or transducers, visit our Web site at [humminbird.com](http://humminbird.com).

## APEX MEGA SI+

### Control Head

APEX 13 Display Size [diagonal]	13.3 inches [337.82 mm]
APEX 16 Display Size [diagonal]	15.6 inches [396.24 mm]
APEX 19 Display Size [diagonal]	18.5 inches [469.9 mm]
Pixel Matrix	FHD 1920 x 1080
Display Type	TFT Color
Backlight	LED
Communication	Bluetooth, NMEA 0183 Bus, NMEA 2000 Bus [LEN = 2], Dual Ethernet, WiFi
Power Requirement	12 VDC
Current Draw	<b>APEX 13:</b> 3.3 Amps <b>APEX 16:</b> 4.4 Amps <b>APEX 19:</b> 4.5 Amps
Recommended Fuse	<b>APEX 13:</b> 5 Amps [slow blow or MDL equivalent] <b>APEX 16:</b> 7.5 Amps [slow blow or MDL equivalent] <b>APEX 19:</b> 7.5 Amps [slow blow or MDL equivalent]
IPX Rating	IPX7 Waterproof/Submersible @ 1 m for 30 minutes and dust tight

### Port 1: 2D, DI, SI, 360

#### CHIRP MEGA SI + Transducer [included]

**XM 14 HW MSIT** [includes built-in temperature probe]

Power Output [MAX]	500 Watts [RMS], 4000 Watts [Peak to Peak]
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#### MEGA Side Imaging+

Operating Frequency	455 kHz, 800 kHz, MEGA Imaging+
Range Capability	<b>455 kHz:</b> 405 - 505 kHz, 800 ft [244 m] Side to Side <b>800 kHz:</b> 780 - 840 kHz, 250 ft [76 m] Side to Side <b>MEGA Imaging+:</b> 1050 - 1175 kHz, 500 ft [152 m] Side to Side
Area of Coverage	<b>455 kHz:</b> [2] 86° @ -10 dB [180° Total Coverage] <b>800 kHz:</b> [2] 55° @ -10 dB [130° Total Coverage] <b>MEGA Imaging+:</b> [2] 86° @ -10 dB [180° Total Coverage]

## MEGA Down Imaging+

Operating Frequency .....	455 kHz, 800 kHz, MEGA Imaging+
Depth Capability .....	<b>455 kHz:</b> 435 - 535 kHz, 400 ft [122 m] <b>800 kHz:</b> 800 - 860 kHz, 125 ft [38 m] <b>MEGA Imaging+:</b> 1100 - 1200 kHz, 250 ft [76 m]
Area of Coverage .....	<b>455 kHz:</b> 75° @ -10 dB <b>800 kHz:</b> 45° @ -10 dB <b>MEGA Imaging+:</b> 75° @ -10 dB

## 2D CHIRP

Default Operating Frequency .....	<b>Dual Spectrum CHIRP:</b> 150 kHz - 220 kHz
Optional Operating Frequency .....	200 kHz, 83 kHz, and 50 kHz High CHIRP, Medium CHIRP, Low CHIRP
Depth Capability .....	1200 ft [365 m]
Area of Coverage .....	<b>Full:</b> 25° - 42°@-10 dB in 150 - 220 kHz <b>Wide:</b> 42°@-10 dB in 140 - 200 kHz <b>Narrow:</b> 25°@-10 dB in 180 - 240 kHz
Power Output [MAX] .....	500 Watts [RMS], 4000 Watts [Peak to Peak]

## Port 2: 2kW 2D

### 2D CHIRP

Optional Operating Frequency .....	200 kHz, 83 kHz, and 50 kHz High CHIRP, Medium CHIRP, Low CHIRP
Depth Capability .....	1200 ft [365 m] / 5,000 ft [1,524 m]*
Power Output [MAX] .....	2,000 Watts [RMS]

\*Optional Airmar CHIRP SM3000 required for extreme deep water use.



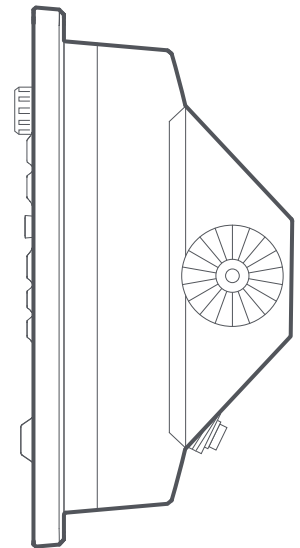
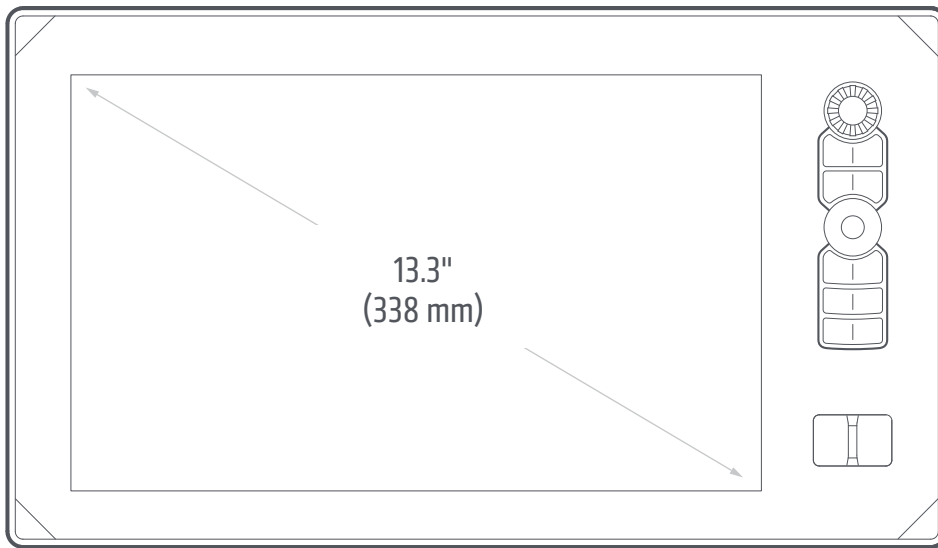
**NOTE:** Humminbird verifies maximum stated depth in saltwater conditions, but actual depth performance may vary due to transducer installation, water type, thermal layers, bottom composition, and slope.



**NOTE:** Product specifications and features are subject to change without notice.

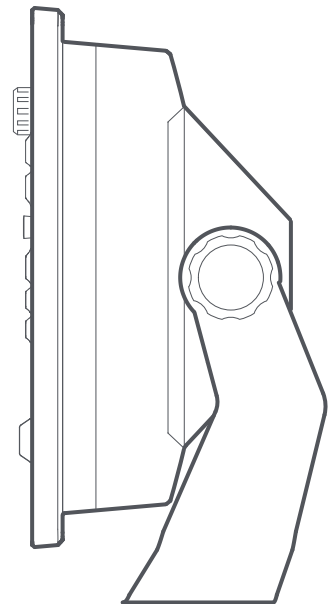
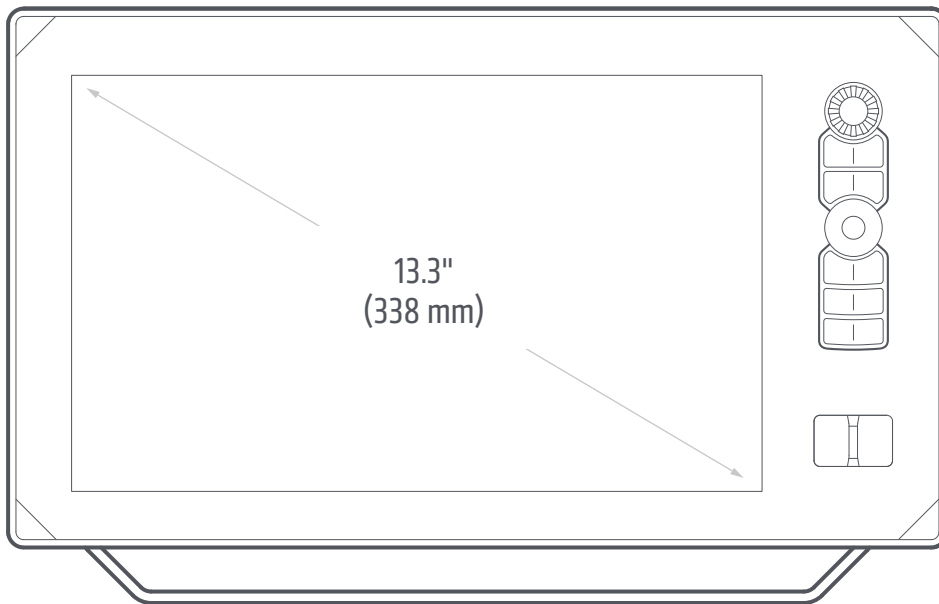


## APEX 13 Control Head Measurements



### APEX 13 In-Dash Mount

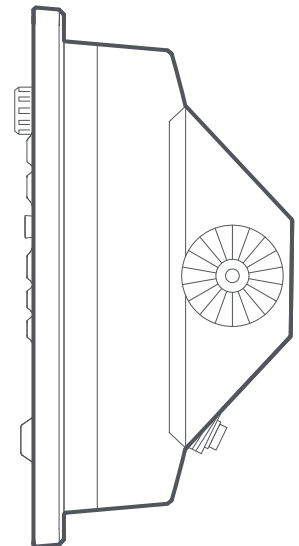
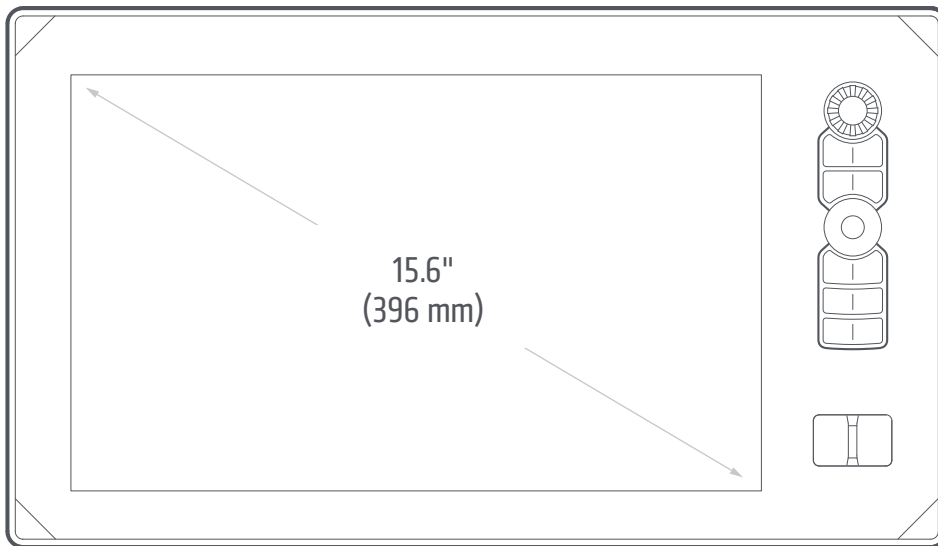
Width	15.6" [396 mm]
Height	8.96" [227 mm]
Depth	5.67" [144 mm]



### APEX 13 Gimbal Mount

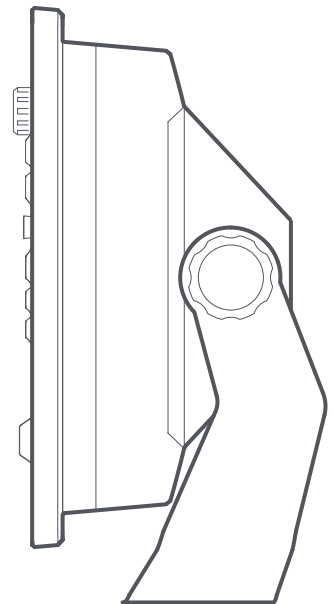
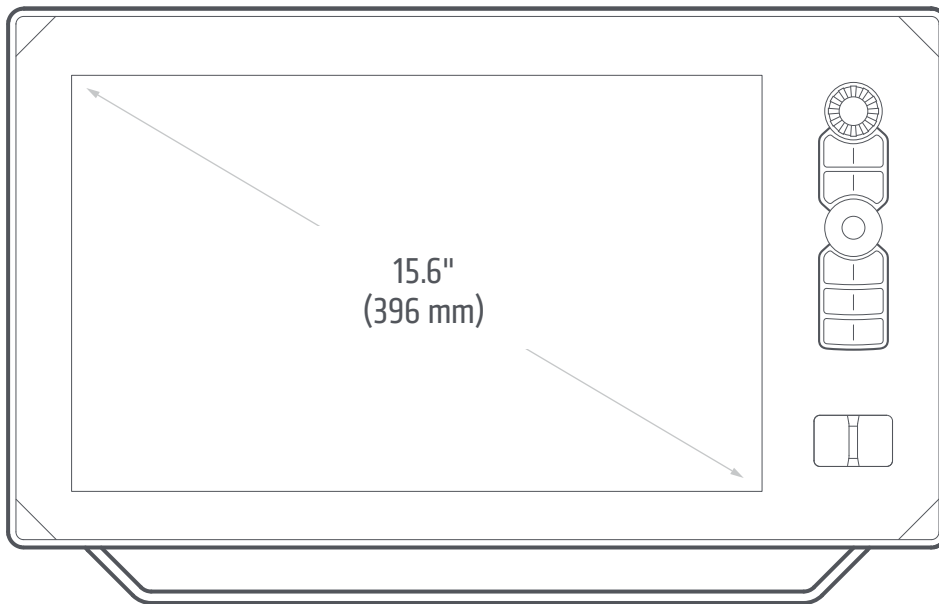
Width	15.6" [396 mm]
Height	9.88" [251 mm]
Depth	4.88" [124 mm]

## APEX 16 Control Head Measurements



### APEX 16 In-Dash Mount

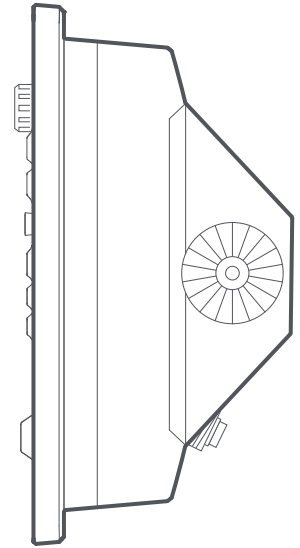
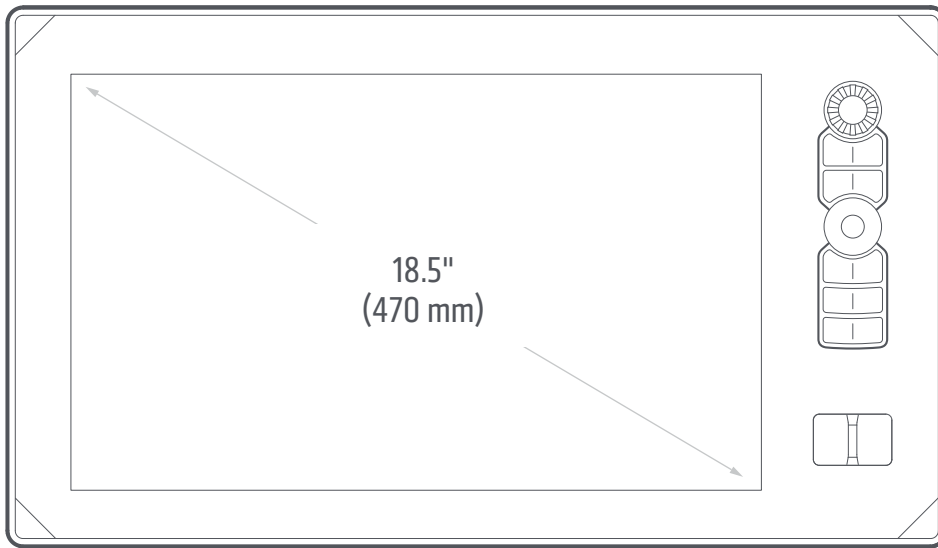
Width	17.65" [448 mm]
Height	10.13" [257 mm]
Depth	5.48" [139 mm]



### APEX 16 Gimbal Mount

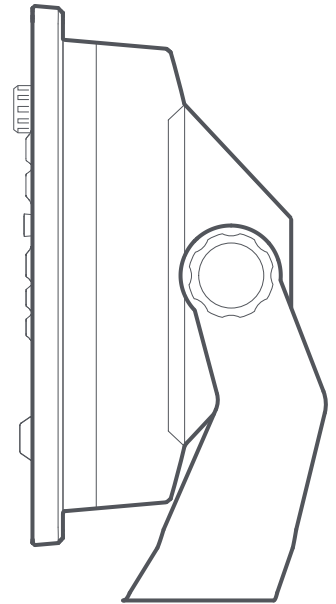
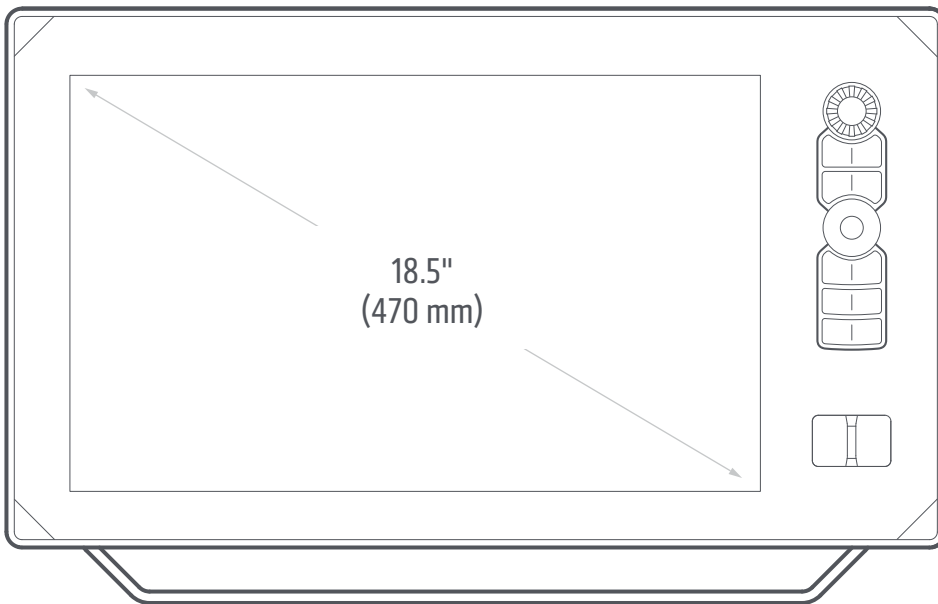
Width	17.65" [448 mm]
Height	11.05" [281 mm]
Depth	4.93" [125 mm]

## APEX 19 Control Head Measurements



### APEX 19 In-Dash Mount

Width	20.27" [515 mm]
Height	11.66" [296 mm]
Depth	5.33" [135 mm]



### APEX 19 Gimbal Mount

Width	20.27" [515 mm]
Height	12.58" [320 mm]
Depth	4.95" [126 mm]


**Control Head**

<b>SOLIX 10</b> Display Size [diagonal] .....	10.1 inches [256.54 mm]
<b>SOLIX 12</b> Display Size [diagonal] .....	12.1 inches [307.3 mm]
<b>SOLIX 15</b> Display Size [diagonal] .....	15.4 inches [391.16 mm]
Pixel Matrix .....	WXGA 1280 x 800
Display Type .....	TFT Color
Backlight .....	LED
Communication .....	Bluetooth, NMEA 0183 Bus, NMEA 2000 Bus [LEN = 2], Ethernet
Power Requirement .....	12 VDC
Current Draw .....	<b>SOLIX 10:</b> 2.5 Amps <b>SOLIX 12:</b> 2.5 Amps <b>SOLIX 15:</b> 3.75 Amps
Recommended Fuse .....	<b>SOLIX 10:</b> 5 Amps [slow blow or MDL equivalent] <b>SOLIX 12:</b> 5 Amps [slow blow or MDL equivalent] <b>SOLIX 15:</b> 7.5 Amps [slow blow or MDL equivalent]
IPX Rating .....	IPX7 Waterproof/Submersible @ 1 m for 30 minutes

**CHIRP DualBeam PLUS Transducer**

**XNT 14 20 T** [includes built-in temperature probe]

Operating Frequency .....	200 kHz and 83 kHz
Depth Capability .....	1500 ft [457 m]
Area of Coverage .....	60°@-10 dB in 83 kHz, 20°@-10 dB in 200 kHz
Power Output [MAX] .....	500 Watts [RMS], 4000 Watts [Peak to Peak]

 **NOTE:** Humminbird verifies maximum stated depth in saltwater conditions, but actual depth performance may vary due to transducer installation, water type, thermal layers, bottom composition, and slope.

 **NOTE:** Product specifications and features are subject to change without notice.

**Control Head**

<b>SOLIX 10</b> Display Size [diagonal] .....	10.1 inches [256.54 mm]
<b>SOLIX 12</b> Display Size [diagonal] .....	12.1 inches [307.3 mm]
<b>SOLIX 15</b> Display Size [diagonal] .....	15.4 inches [391.16 mm]
Pixel Matrix .....	WXGA 1280 x 800
Display Type .....	TFT Color
Backlight .....	LED
Communication .....	Bluetooth, NMEA 0183 Bus, NMEA 2000 Bus [LEN = 2], Ethernet
Power Requirement .....	12 VDC
Current Draw .....	<b>SOLIX 10:</b> 2.5 Amps <b>SOLIX 12:</b> 2.5 Amps <b>SOLIX 15:</b> 3.75 Amps
Recommended Fuse .....	<b>SOLIX 10:</b> 5 Amps [slow blow or MDL equivalent] <b>SOLIX 12:</b> 5 Amps [slow blow or MDL equivalent] <b>SOLIX 15:</b> 7.5 Amps [slow blow or MDL equivalent]
IPX Rating .....	IPX7 Waterproof/Submersible @ 1 m for 30 minutes and dust tight

**CHIRP MEGA Side Imaging Transducer****XM 14 20 MSI T** [includes built-in temperature probe]

Power Output [MAX] .....	500 Watts [RMS], 4000 Watts [Peak to Peak]
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**Side Imaging**

Operating Frequency .....	455 kHz, 800 kHz, MEGA
Range Capability .....	<b>455 kHz:</b> 800 ft [244 m] Side to Side <b>800 kHz:</b> 250 ft [76 m] Side to Side <b>MEGA:</b> 250 ft [76 m] Side to Side
Area of Coverage .....	<b>455 kHz:</b> [2] 86° @ -10 dB [180° Total Coverage] <b>800 kHz:</b> [2] 55° @ -10 dB [130° Total Coverage] <b>MEGA:</b> [2] 86° @ -10 dB [180° Total Coverage]

**Down Imaging**

Operating Frequency .....	455 kHz, 800 kHz, MEGA
Depth Capability .....	<b>455 kHz:</b> 800 ft [122 m] <b>800 kHz:</b> 150 ft [45.7 m] <b>MEGA:</b> 125 ft [38 m]
Area of Coverage .....	<b>455 kHz:</b> 75° @ -10 dB <b>800 kHz:</b> 45° @ -10 dB <b>MEGA:</b> 75° @ -10 dB

## DualBeam PLUS

Operating Frequency .....	200 kHz and 83 kHz
Depth Capability .....	1500 ft (457 m)
Area of Coverage .....	60°@-10 dB in 83 kHz 20°@-10 dB in 200 kHz
Power Output [MAX] .....	500 Watts [RMS], 4000 Watts [Peak to Peak]



**NOTE:** Humminbird verifies maximum stated depth in saltwater conditions, but actual depth performance may vary due to transducer installation, water type, thermal layers, bottom composition, and slope.



**NOTE:** Product specifications and features are subject to change without notice.



**Control Head**

<b>SOLIX 10</b> Display Size [diagonal] .....	10.1 inches [256.54 mm]
<b>SOLIX 12</b> Display Size [diagonal] .....	12.1 inches [307.3 mm]
<b>SOLIX 15</b> Display Size [diagonal] .....	15.4 inches [391.16 mm]
Pixel Matrix .....	WXGA 1280 x 800
Display Type .....	TFT Color
Backlight .....	LED
Communication .....	Bluetooth, NMEA 0183 Bus, NMEA 2000 Bus [LEN = 2], Ethernet
Power Requirement .....	12 VDC
Current Draw .....	<b>SOLIX 10:</b> 2.5 Amps <b>SOLIX 12:</b> 2.5 Amps <b>SOLIX 15:</b> 3.75 Amps
Recommended Fuse .....	<b>SOLIX 10:</b> 5 Amps [slow blow or MDL equivalent] <b>SOLIX 12:</b> 5 Amps [slow blow or MDL equivalent] <b>SOLIX 15:</b> 7.5 Amps [slow blow or MDL equivalent]
IPX Rating .....	IPX7 Waterproof/Submersible @ 1 m for 30 minutes and dust tight

**CHIRP MEGA Down Imaging Transducer****XM 9 MDI T** [includes built-in temperature probe]**Down Imaging**

Operating Frequency .....	455 kHz, 800 kHz, MEGA
Depth Capability .....	<b>455 kHz:</b> 800 ft [122 m] <b>800 kHz:</b> 150 ft [45.7 m] <b>MEGA:</b> 125 ft [38 m]
Area of Coverage .....	<b>455 kHz:</b> 75° @ -10 dB <b>800 kHz:</b> 45° @ -10 dB <b>MEGA:</b> 75° @ -10 dB
Power Output [MAX] .....	500 Watts [RMS], 4000 Watts [Peak to Peak]

## 2D Sonar

Operating Frequency .....	200 kHz
Depth Capability .....	1200 ft (366 m)
Area of Coverage .....	20°@-10 dB in 200 kHz
Power Output [MAX] .....	500 Watts [RMS], 4000 Watts [Peak to Peak]



**NOTE:** Humminbird verifies maximum stated depth in saltwater conditions, but actual depth performance may vary due to transducer installation, water type, thermal layers, bottom composition, and slope.



**NOTE:** Product specifications and features are subject to change without notice.

**Control Head**

<b>SOLIX 10</b> Display Size [diagonal] .....	10.1 inches [256.54 mm]
<b>SOLIX 12</b> Display Size [diagonal] .....	12.1 inches [307.3 mm]
<b>SOLIX 15</b> Display Size [diagonal] .....	15.4 inches [391.16 mm]
Pixel Matrix .....	WXGA 1280 x 800
Display Type .....	TFT Color
Backlight .....	LED
Communication .....	Bluetooth, NMEA 0183 Bus, NMEA 2000 Bus [LEN = 2], Ethernet, WiFi
Power Requirement .....	12 VDC
Current Draw .....	<b>SOLIX 10:</b> 2.5 Amps <b>SOLIX 12:</b> 2.5 Amps <b>SOLIX 15:</b> 3.75 Amps
Recommended Fuse .....	<b>SOLIX 10:</b> 5 Amps [slow blow or MDL equivalent] <b>SOLIX 12:</b> 5 Amps [slow blow or MDL equivalent] <b>SOLIX 15:</b> 7.5 Amps [slow blow or MDL equivalent]
IPX Rating .....	IPX7 Waterproof/Submersible @ 1 m for 30 minutes and dust tight

**CHIRP MEGA SI + Transducer [included]****XM 14 HW MSI T** [includes built-in temperature probe]

Power Output [MAX] .....	500 Watts [RMS], 4000 Watts [Peak to Peak]
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**MEGA Side Imaging+**

Operating Frequency .....	455 kHz, 800 kHz, MEGA Imaging+
Range Capability .....	<b>455 kHz:</b> 404 - 505 kHz, 800 ft [244 m] Side to Side <b>800 kHz:</b> 780 - 840 kHz, 250 ft [76 m] Side to Side <b>MEGA Imaging+:</b> 1050 - 1175 kHz, 500 ft [152 m] Side to Side
Area of Coverage .....	<b>455 kHz:</b> [2] 86° @ -10 dB [180° Total Coverage] <b>800 kHz:</b> [2] 55° @ -10 dB [130° Total Coverage] <b>MEGA Imaging+:</b> [2] 86° @ -10 dB [180° Total Coverage]

**MEGA Down Imaging+**

Operating Frequency .....	455 kHz, 800 kHz, MEGA Imaging+
Depth Capability .....	<b>455 kHz:</b> 435 - 535 kHz, 400 ft [122 m] <b>800 kHz:</b> 800 - 860 kHz, 125 ft [38 m] <b>MEGA Imaging+:</b> 1100 - 1200 kHz, 250 ft [76 m]
Area of Coverage .....	<b>455 kHz:</b> 75° @ -10 dB <b>800 kHz:</b> 45° @ -10 dB <b>MEGA Imaging+:</b> 75° @ -10 dB

## Dual Spectrum CHIRP

Default Operating Frequency .....	150 kHz - 220 kHz
Depth Capability .....	1200 ft (366 m)
Area of Coverage .....	<b>Full:</b> 25° - 42°@-10 dB in 150 - 220 kHz <b>Wide:</b> 42°@-10 dB in 140 - 200 kHz <b>Narrow:</b> 25°@-10 dB in 180 - 240 kHz
Power Output [MAX] .....	500 Watts [RMS], 4000 Watts [Peak to Peak]



**NOTE:** Humminbird verifies maximum stated depth in saltwater conditions, but actual depth performance may vary due to transducer installation, water type, thermal layers, bottom composition, and slope.



**NOTE:** Product specifications and features are subject to change without notice.

**Control Head**

<b>SOLIX 10</b> Display Size [diagonal] .....	10.1 inches [256.54 mm]
<b>SOLIX 12</b> Display Size [diagonal] .....	12.1 inches [307.3 mm]
<b>SOLIX 15</b> Display Size [diagonal] .....	15.4 inches [391.16 mm]
Pixel Matrix .....	WXGA 1280 x 800
Display Type .....	TFT Color
Backlight .....	LED
Communication .....	Bluetooth, NMEA 0183 Bus, NMEA 2000 Bus [LEN = 2], Ethernet, WiFi
Power Requirement .....	12 VDC
Current Draw .....	<b>SOLIX 10:</b> 2.5 Amps <b>SOLIX 12:</b> 2.5 Amps <b>SOLIX 15:</b> 3.75 Amps
Recommended Fuse .....	<b>SOLIX 10:</b> 5 Amps [slow blow or MDL equivalent] <b>SOLIX 12:</b> 5 Amps [slow blow or MDL equivalent] <b>SOLIX 15:</b> 7.5 Amps [slow blow or MDL equivalent]
IPX Rating .....	IPX7 Waterproof/Submersible @ 1 m for 30 minutes and dust tight

**CHIRP MEGA Down Imaging+ Transducer [not included]**

**XM 14 HW MDI T** [includes built-in temperature probe]

**Down Imaging**

Operating Frequency .....	455 kHz, 800 kHz, MEGA Imaging+
Depth Capability .....	<b>455 kHz:</b> 800 ft [122 m] <b>800 kHz:</b> 150 ft [45.7 m] <b>MEGA Imaging+:</b> 250 ft [76 m]
Area of Coverage .....	<b>455 kHz:</b> 75° @ -10 dB <b>800 kHz:</b> 45° @ -10 dB <b>MEGA Imaging+:</b> 75° @ -10 dB
Power Output [MAX] .....	500 Watts [RMS], 4000 Watts [Peak to Peak]

## 2D Sonar

Operating Frequency .....	200 kHz
Depth Capability .....	1200 ft (366 m)
Area of Coverage .....	20°@-10 dB in 200 kHz
Power Output [MAX] .....	500 Watts [RMS], 4000 Watts [Peak to Peak]



**NOTE:** Humminbird verifies maximum stated depth in saltwater conditions, but actual depth performance may vary due to transducer installation, water type, thermal layers, bottom composition, and slope.



**NOTE:** Product specifications and features are subject to change without notice.



**Control Head**

<b>SOLIX 10</b> Display Size [diagonal] .....	10.1 inches [256.54 mm]
<b>SOLIX 12</b> Display Size [diagonal] .....	12.1 inches [307.3 mm]
<b>SOLIX 15</b> Display Size [diagonal] .....	15.4 inches [391.16 mm]
Pixel Matrix .....	WXGA 1280 x 800
Display Type .....	TFT Color
Backlight .....	LED
Communication .....	Bluetooth, NMEA 0183 Bus, NMEA 2000 Bus [LEN = 2], Ethernet, WiFi
Power Requirement .....	12 VDC
Current Draw .....	<b>SOLIX 10:</b> 2.4 Amps <b>SOLIX 12:</b> 2.9 Amps <b>SOLIX 15:</b> 4 Amps
Recommended Fuse .....	<b>SOLIX 10:</b> 5 Amps [slow blow or MDL equivalent] <b>SOLIX 12:</b> 5 Amps [slow blow or MDL equivalent] <b>SOLIX 15:</b> 7.5 Amps [slow blow or MDL equivalent]
IPX Rating .....	IPX7 Waterproof/Submersible @ 1 m for 30 minutes and dust tight

**CHIRP MEGA SI + Transducer [included]****XM 14 HW MSI T** [includes built-in temperature probe]

Power Output [MAX] .....	500 Watts [RMS], 4000 Watts [Peak to Peak]
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**MEGA Side Imaging+**

Operating Frequency .....	455 kHz, 800 kHz, MEGA Imaging+
Range Capability .....	<b>455 kHz:</b> 404 - 505 kHz, 800 ft [244 m] Side to Side <b>800 kHz:</b> 780 - 840 kHz, 250 ft [76 m] Side to Side <b>MEGA Imaging+:</b> 1050 - 1175 kHz, 500 ft [152 m] Side to Side
Area of Coverage .....	<b>455 kHz:</b> [2] 86° @ -10 dB [180° Total Coverage] <b>800 kHz:</b> [2] 55° @ -10 dB [130° Total Coverage] <b>MEGA Imaging+:</b> [2] 86° @ -10 dB [180° Total Coverage]

**MEGA Down Imaging+**

Operating Frequency .....	455 kHz, 800 kHz, MEGA Imaging+
Depth Capability .....	<b>455 kHz:</b> 435 - 535 kHz, 400 ft [122 m] <b>800 kHz:</b> 800 - 860 kHz, 125 ft [38 m] <b>MEGA Imaging+:</b> 1100 - 1200 kHz, 250 ft [76 m]
Area of Coverage .....	<b>455 kHz:</b> 75° @ -10 dB <b>800 kHz:</b> 45° @ -10 dB <b>MEGA Imaging+:</b> 75° @ -10 dB

## Dual Spectrum CHIRP

Default Operating Frequency .....	150 kHz - 220 kHz
Depth Capability .....	1200 ft (366 m)
Area of Coverage .....	<b>Full:</b> 25° - 42°@-10 dB in 150 - 220 kHz <b>Wide:</b> 42°@-10 dB in 140 - 200 kHz <b>Narrow:</b> 25°@-10 dB in 180 - 240 kHz
Power Output [MAX].....	500 Watts [RMS], 4000 Watts [Peak to Peak]



**NOTE:** Humminbird verifies maximum stated depth in saltwater conditions, but actual depth performance may vary due to transducer installation, water type, thermal layers, bottom composition, and slope.



**NOTE:** Product specifications and features are subject to change without notice.

**Control Head**

<b>SOLIX 10</b> Display Size [diagonal] .....	10.1 inches [256.54 mm]
<b>SOLIX 12</b> Display Size [diagonal] .....	12.1 inches [307.3 mm]
<b>SOLIX 15</b> Display Size [diagonal] .....	15.4 inches [391.16 mm]
Pixel Matrix .....	WXGA 1280 x 800
Display Type .....	TFT Color
Backlight .....	LED
Communication .....	Bluetooth, NMEA 0183 Bus, NMEA 2000 Bus [LEN = 2], Ethernet, WiFi
Power Requirement .....	12 VDC
Current Draw .....	<b>SOLIX 10:</b> 2.4 Amps <b>SOLIX 12:</b> 2.9 Amps <b>SOLIX 15:</b> 4 Amps
Recommended Fuse .....	<b>SOLIX 10:</b> 5 Amps [slow blow or MDL equivalent] <b>SOLIX 12:</b> 5 Amps [slow blow or MDL equivalent] <b>SOLIX 15:</b> 7.5 Amps [slow blow or MDL equivalent]
IPX Rating .....	IPX7 Waterproof/Submersible @ 1 m for 30 minutes and dust tight

**CHIRP MEGA Down Imaging+ Transducer [not included]**

**XM 14 HW MDI T** [includes built-in temperature probe]

**Down Imaging**

Operating Frequency .....	455 kHz, 800 kHz, MEGA Imaging+
Depth Capability .....	<b>455 kHz:</b> 800 ft [122 m] <b>800 kHz:</b> 150 ft [45.7 m] <b>MEGA Imaging+:</b> 250 ft [76 m]
Area of Coverage .....	<b>455 kHz:</b> 75° @ -10 dB <b>800 kHz:</b> 45° @ -10 dB <b>MEGA Imaging+:</b> 75° @ -10 dB
Power Output [MAX] .....	500 Watts [RMS], 4000 Watts [Peak to Peak]

## 2D Sonar

Operating Frequency .....	200 kHz
Depth Capability .....	1200 ft (366 m)
Area of Coverage .....	20°@-10 dB in 200 kHz
Power Output [MAX] .....	500 Watts [RMS], 4000 Watts [Peak to Peak]

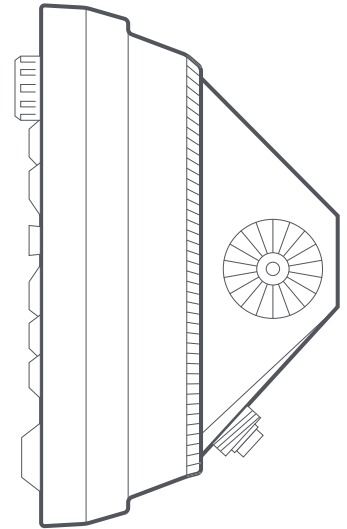
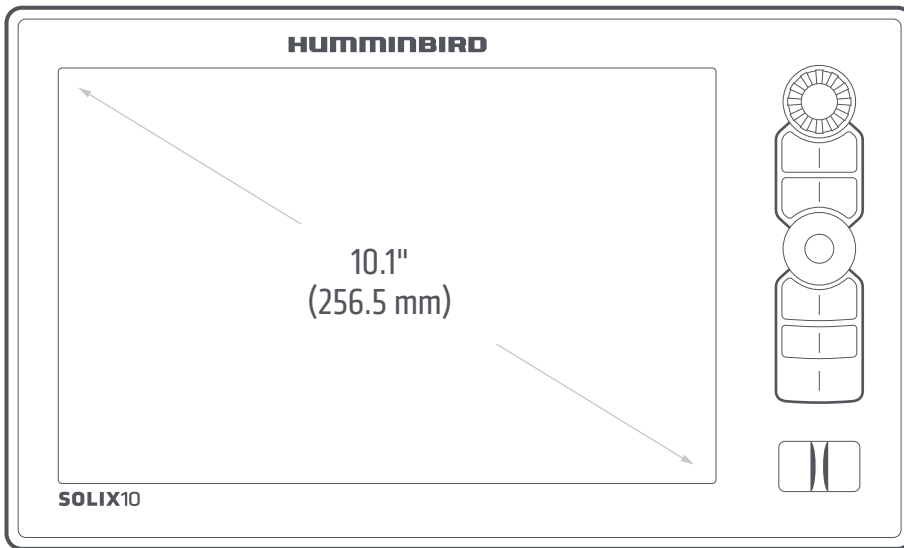


**NOTE:** Humminbird verifies maximum stated depth in saltwater conditions, but actual depth performance may vary due to transducer installation, water type, thermal layers, bottom composition, and slope.



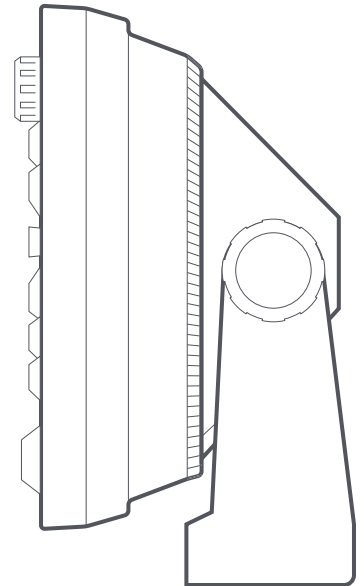
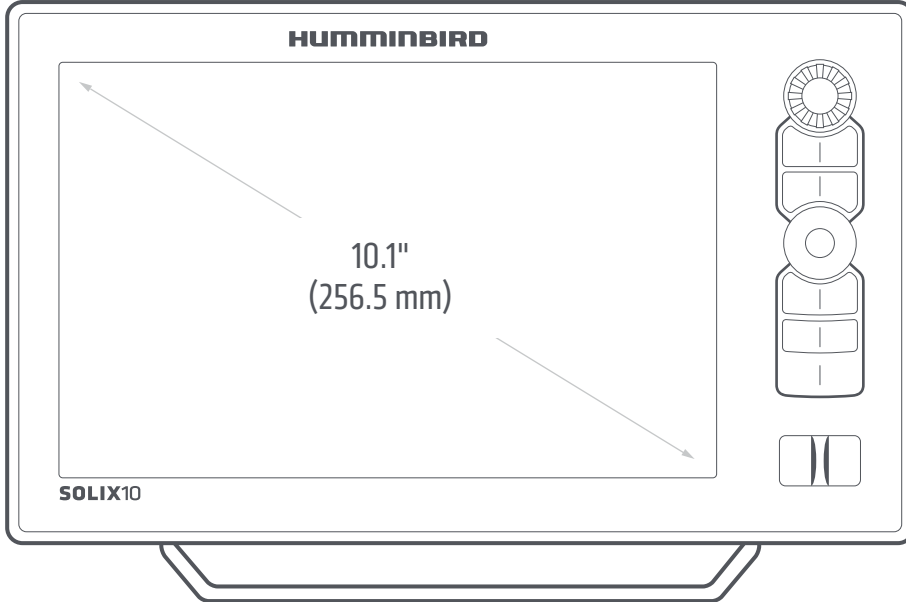
**NOTE:** Product specifications and features are subject to change without notice.

## SOLIX 10 Control Head Measurements



### SOLIX 10 In-Dash Mount (separate purchase required)

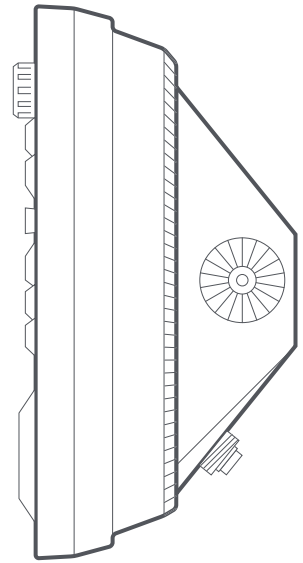
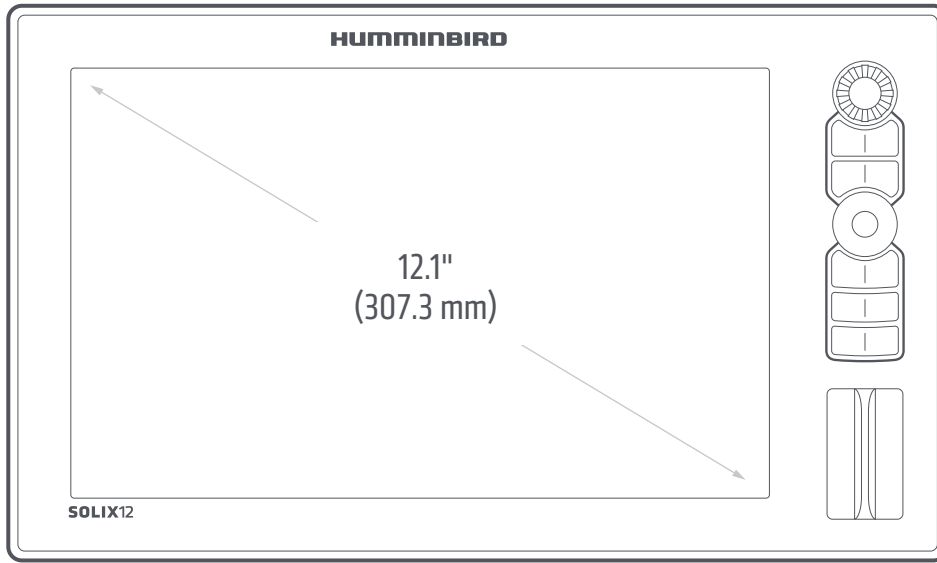
Width	11.8" [299.7 mm]
Height	7.1" [179.3 mm]
Depth	1.2" [30.5 mm]



### SOLIX 10 Gimbal Mount

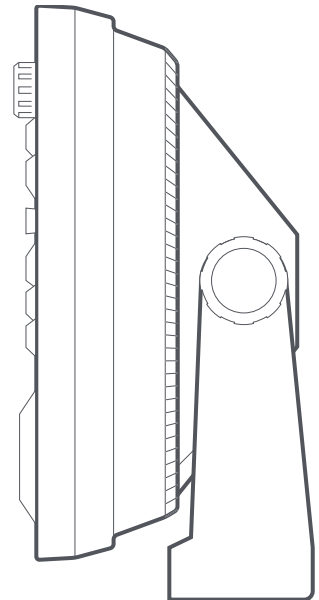
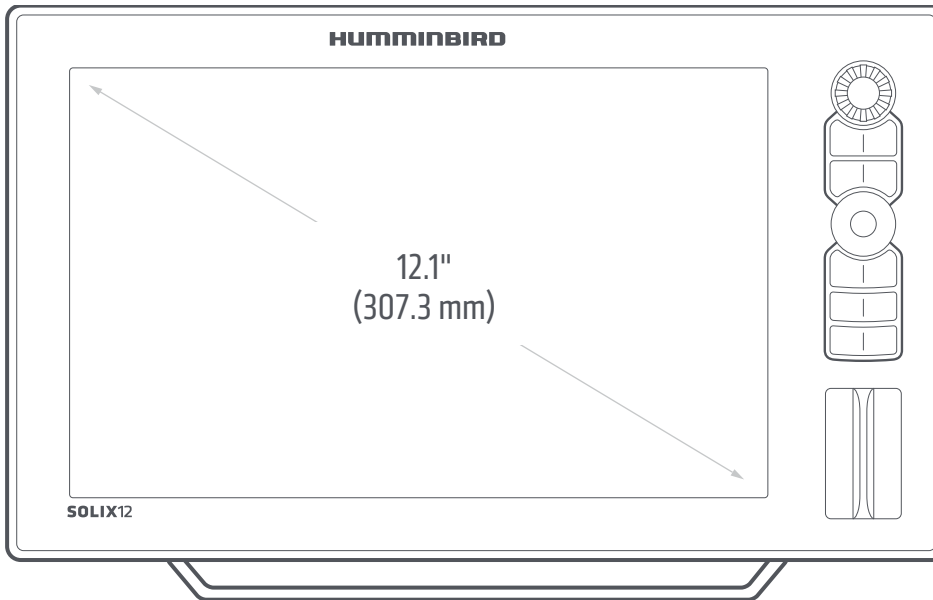
Width	11.8" [299.7 mm]
Height	7.9" [200.4 mm]
Depth	4.8" [122 mm]

## SOLIX 12 Control Head Measurements



### SOLIX 12 In-Dash Mount (separate purchase required)

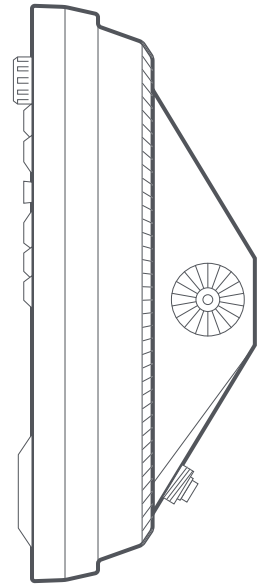
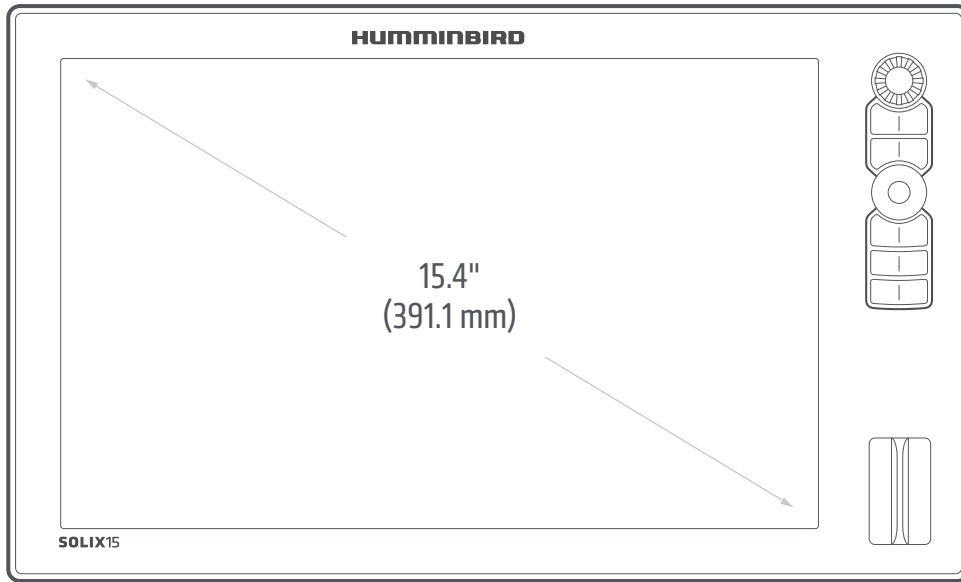
Width	13.8" [350.5 mm]
Height	8.2" [208.5 mm]
Depth	1.2" [30.5 mm]



### SOLIX 12 Gimbal Mount

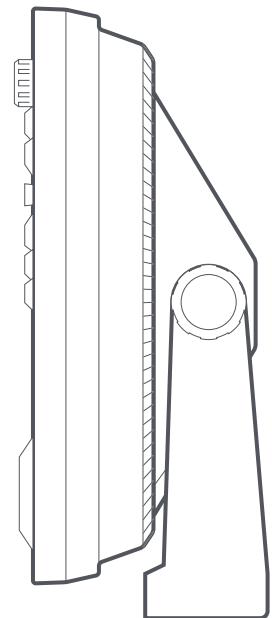
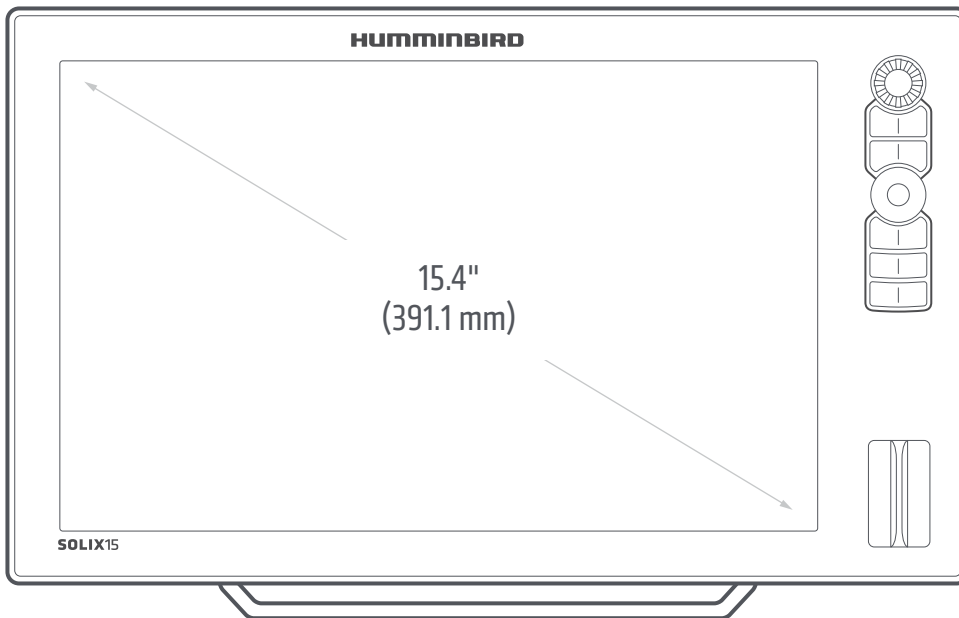
Width	13.8" [350.5 mm]
Height	8.7" [221 mm]
Depth	4.8" [122 mm]

## SOLIX 15 Control Head Measurements



### SOLIX 15 In-Dash Mount (separate purchase required)

Width	16.5" [419.9 mm]
Height	10.1" [256.5 mm]
Depth	1.2" [30.5 mm]



### SOLIX 15 Gimbal Mount

Width	16.5" [419 mm]
Height	10.5" [266.7 mm]
Depth	4.8" [122 mm]



# STATEMENTS AND ACKNOWLEDGEMENTS

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**Send the letter of request\* to the following address:**

Software Request  
Humminbird  
678 Humminbird Lane  
Eufaula, AL 36027

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Humminbird serial number  
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Humminbird  
678 Humminbird Lane  
Eufaula, AL 36027

**\*NOTE:** A copy of the Linux operating system is not required to upgrade your fishing system. The Humminbird application software and control head include a separate service warranty. Please see [humminbird.com](http://humminbird.com) and the separate warranty card included with your unit for details.

## Macho (C++ Machine Objects) (The MIT License)

The Machine Objects class library [in short Macho] allows the creation of state machines based on the "State" design pattern in straight C++. It extends the pattern with the option to create hierarchical state machines, making it possible to convert the popular UML statechart notation to working code in a straightforward way. Other features are entry and exit actions, state histories and state variables.

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