

*Supra[®]
Vision[™] Control
2023*

Owner's Manual



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This product can expose you to chemicals including lead, which is known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov.

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AutoWake™ : U.S. Patent Nos. 8,798,825; 9,499,242; 9,689,395; 9,828,075; 9,873,491; 10,093,398; 10,414,470; 10,640,182; 10,717,502; 10,759,507; 10,858,080; 10,926,848, 10,676,166, 11,130,551, 11,358,68 and other patents pending.

Amplitude Display: U.S. Patent No. 9,950,771; 10,577,054.

Supra Thruster Control Knob: U.S. Patent No. 11,014,638.

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Product Information

The Supra® Vision™ Control 2023 displays are designed for instrumentation and control on electronically controlled engines communicating via SAE J1939 and NMEA 2000. The multi-functional displays enable boat operators to view many different engine, ballast, transmission parameters and service codes, GPS tracking, AutoWake®/Surf controls and cruise control. Included with this solution are the PV1100, PV1200 and PV450 Touch units.

PV1100	PV1200	PV450
		

Care and Maintenance

General maintenance is not required; however, a soft cloth can be used for cleaning the units. Window cleaner or alcohol can also be used to clean the glass portion of the display. Do not use harsh or abrasive cleaners on the units.

Basic Navigation Features

All product features are easily accessed through Quick Access Buttons (only on the PV450), Touch Screen Points and Menus.

Quick Access Buttons (PV450 Only)

Functions can be accessed quickly by pressing one of the following Quick Access Buttons:



Touch Screen Points (PV450, PV1100 and PV1200)

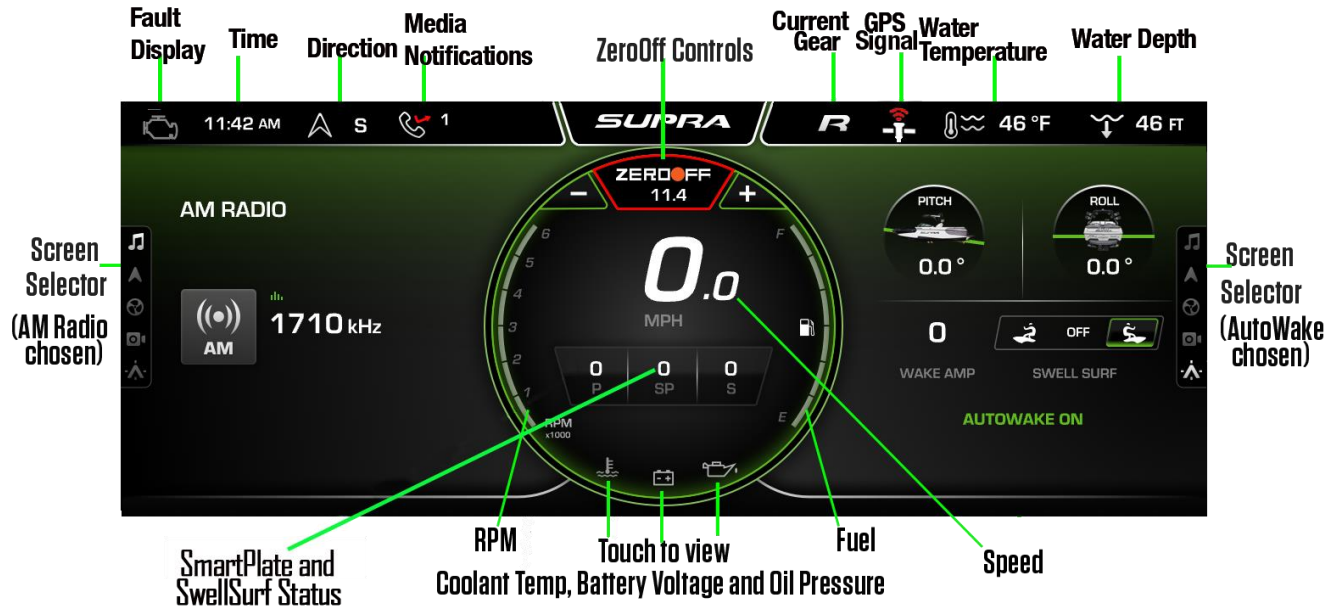
Navigation within the screens is controlled by touching the screen's active areas. These areas are illustrated within the following sections specific to each display.

Menus (PV450 and PV1100)

Menus within the PV450 and PV1100 displays allow the system's controls to be customized. These areas will be discussed within the Settings section for the PV450 and PV1100.

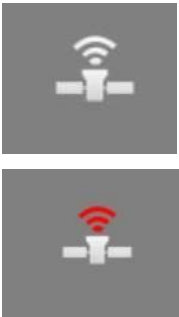
PV1200 Features

Home Screen



Screen Area	Description
Fault Display	Engine or PDM faults will appear in this area. To investigate the cause of the fault, review the Diagnostics utility within Settings on the PV1100.
Time	Displays the local time.
Direction	Displays the current direction in which the boat is traveling.
Media Notifications	Displays the number of missed incoming calls for connected cellular devices.
ZeroOff Controls	Turns on and off the ZeroOff GPS Speed Control® system and decreases/increases the GPS Cruise speed.
Current Gear	Displays F (Forward), R (Reverse) or N (Neutral) according to the gear currently being used.

Continued

Screen Area	Description
GPS Signal 	Illuminates red when the GPS signal is low or white when the GPS signal is good. If the GPS signal is low or lost, the PV1100 will display one of the following messages:  or 
Water Temperature	Displays the current temperature of the water in which the boat is residing.
Water Depth	Displays the current detected depth of the water.

Continued

Screen Area	Description
Screen Selector	Provides the ability to choose between up to 5 screen contents for each side of the PV1200. Slide your finger or tap to view Music, Maps, Thruster, Video or AutoWake capabilities. The chosen capability can only be displayed on one side at a time.
Touch to View area	Touch the symbols in this area to briefly display the coolant temperature, the battery voltage or the oil pressure.
SmartPlate and SwellSurfStatus	Displays the Port (Left plate), Starboard (Right plate) and SmartPlate (Middle plate) settings.

Media

For the PV1200 to display media contents, the media must be connected on the PV1100. Please see the section within PV1100 titled [Bluetooth](#) for instructions on connecting these devices to a Bluetooth source.

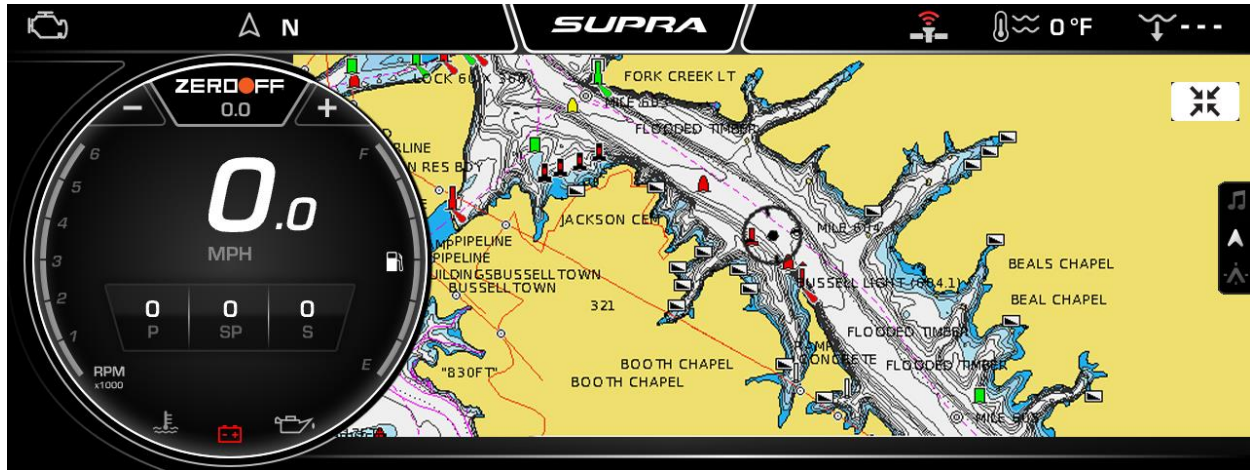
Maps

Similar to Media, Maps will be displayed on the PV1200, with the Maps controls residing on the PV1100. Please see the section titled PV1100 [Maps](#) for instructions on using this utility.

The one Maps control that resides on the PV1200 is the expandable screen:



When a larger Maps screen is desired, touch the  symbol, and the center dial will slide to the side, expanding the screen:



To bring the screen back to what is shown in the top picture, touch the  symbol again. Maps can be displayed on the left side of the screen and when expanded, the above screen will be flipped to the other side.

Video

The video controls that reside on the PV1200 allow you to choose between a view from the Tower or the Transom:



Touch the Tower or Transom button to switch to the alternate video view. Both the Tower and Transom camera video feeds will be displayed automatically when the shifter is moved to Reverse and remain on for 10 seconds when the shifter is returned to the Neutral or Forward positions.

AutoWake®

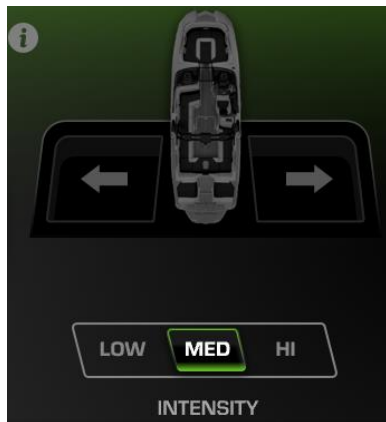
When AutoWake is enabled and active, the ballast system will be automatically controlled to target and maintain specific boat axes (pitch and roll). Pitch and roll set points are determined by the active rider profile and the currently selected Surf side (Left/Right). Changes to the current Surf side's pitch and roll set points can be saved to the active rider profile or saved to a new profile.

The AutoWake controls reside on the PV1100. Please see the section titled [AutoWake](#) for additional information. AutoWake™ : U.S. Patent Nos. 8,798,825; 9,499,242; 9,689,395; 9,828,075; 9,873,491; 10,093,398; 10,414,470; 10,640,182; 10,717,502; 10,759,507; 10,858,080; 10,926,848, 10,676,166, 11,130,551, 11,358,68 and other patents pending. See www.skierschoice.com/patents-trademarks/ for virtual patent marking.



Dock Hold Intensity

If available on the boat and enabled (occurs when the engine is on, the battery's level is above 10V and the boat's speed remains under 5 mph), the sides of the 1200 screen will appear with a Dock Hold Intensity (Thruster) button included:



There are five states to the system: Off, Port Dock Hold, Starboard Dock Hold, Port Burst and Starboard Burst.

Touching one of the white arrows will trigger Port or Starboard Hold accordingly and cancel any other state. Touching the same arrow will turn the system off.

Port and Starboard Burst are triggered by a knob on the boat's throttle.

Adjust the intensity by selecting Low, Medium or High. When active, a popup will appear on the right side of the PV1200 indicating the direction the boat will be moving. The popup will go away when the system is off or idle.

Touching the  will display the conditions by which the system will activate.

ZeroOff GPS® Speed Control

Zero Off is a GPS speed control based solely on input from satellites and engine management systems. It is based on the speed you are traveling across the surface of the water; therefore, there is no requirement for skier weight, crew weight or any kind of wind adjustment. You simply touch the ZeroOff button, set the desired speed and go. This easy-to-use technology has made Zero Off the industry standard.

Touch the ZeroOff button to turn on the GPS speed control. Use the + and – buttons to adjust the Set Speed.

To turn off ZeroOff, touch the ZeroOff button again.



PV1100 Features

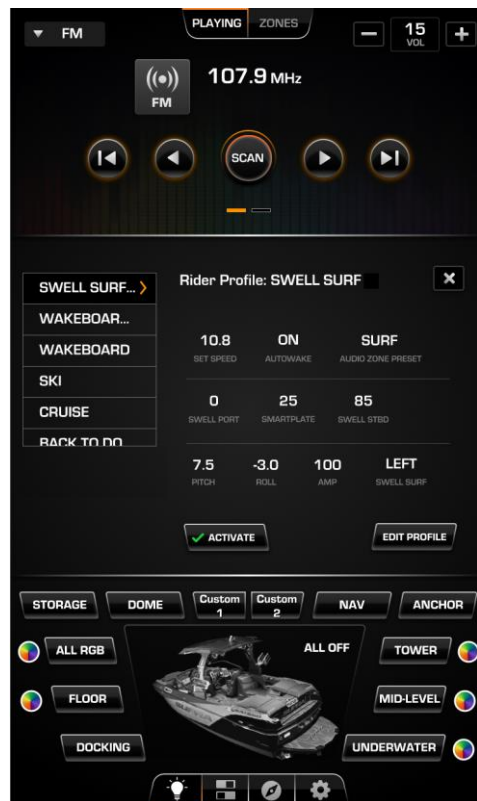
Home Screen

While the PV1200 is the flash of the Vision Control, the PV1100 is the function. Most of the settings will be set and controlled through this display.

The top portion of this screen contains the Media controls.

The middle portion of this screen houses Rider Profiles, Ballast and the AutoWake Settings.

The lower portion displays Lights, Switches and Navigation Controls, and the System Settings.

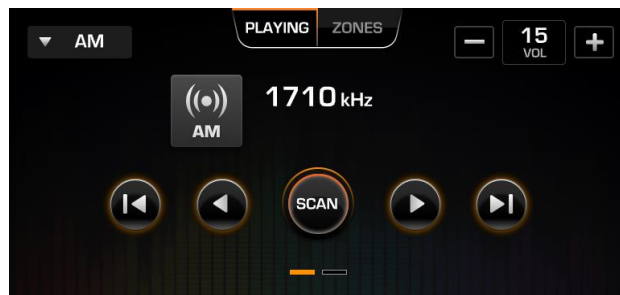


Media Controls

**Rider Profiles
Ballast
and
Autawake Settings**

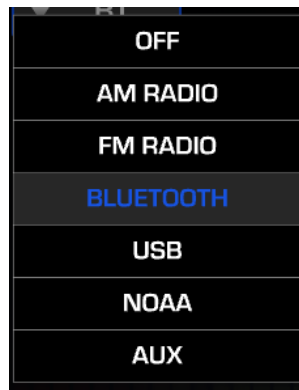
**Lights
Switches
Navigation
and
Settings**

Media Controls

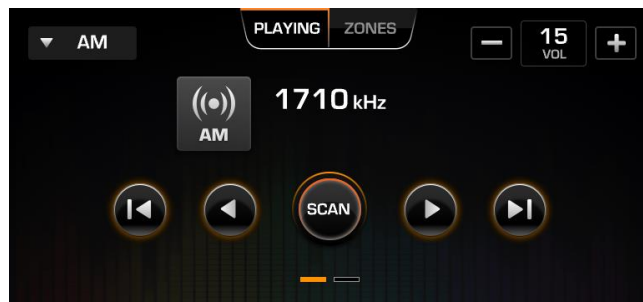


The top third on the PV1100 display contains the Media Controls.

Media files can be sourced through the following choices:



Source: AM / FM Radio

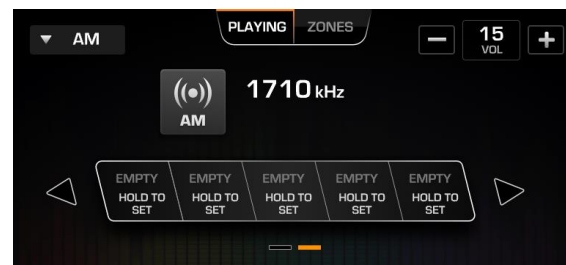


Adjust the volume by the – and + buttons.

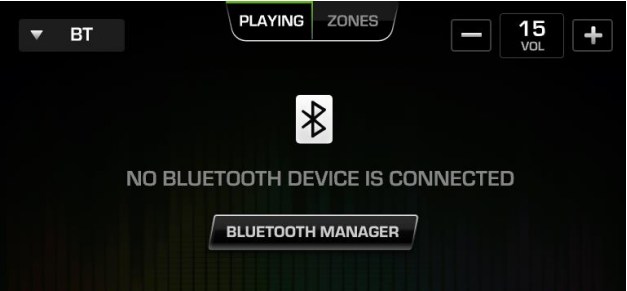
Touch **SCAN**,  or  to navigate to the desired station.

Touch  to view the second page.

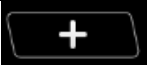
Both AM and FM Radio sources contain 10 saveable slots. Dial in the preferred station, then press and hold an available slot for approximately 3 seconds to save. When the five shown slots are filled, touch the right arrow for 5 additional slots.



Source: Bluetooth



To connect a Bluetooth device, follow these steps:

Step	Action
1	Touch the Bluetooth Manager button. Previously connected devices (if still saved in memory) will be displayed.
2	If a particular device is not displayed, touch  . Check that Bluetooth is turned on and discoverable on your personal device.

Continued

Step	Action
3	The PV1100 will begin to scan for new devices and display its findings on the screen. Touch the + beside the device to be added when it appears.
4	The PV1100 will then show that a pairing has been requested. On the device to be added, a Bluetooth Pairing Request message will appear. Touch "Pair".
5	On the PV1100, a message will appear stating Pairing Complete.
6	A second question may appear on the device asking if the PV1100 can have access to the device's contacts. Select either Yes or No.
7	When paired, the PV1100 display will show a check mark beside the connected device. 
8	Touch the Source tab again, which now shows BT. On the personal device, navigate to the music source of choice and the device's music content will begin to play on the screen.

Source: USB

Insert a USB containing music files into the PV1100's pigtail and the screen will display the contents of the drive (one song at a time).

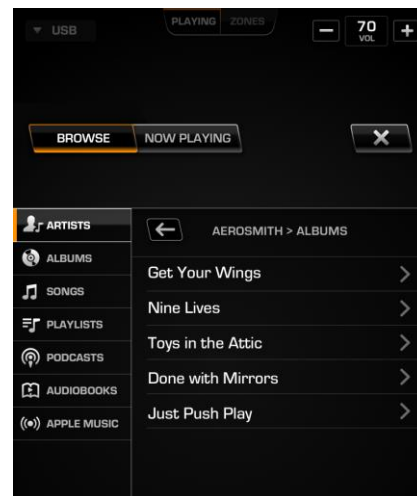


Touch  to browse the contents of the USB.

Touch  to return to the above screen.

Play a song on the list by selecting it.

Touch  to exit this screen.



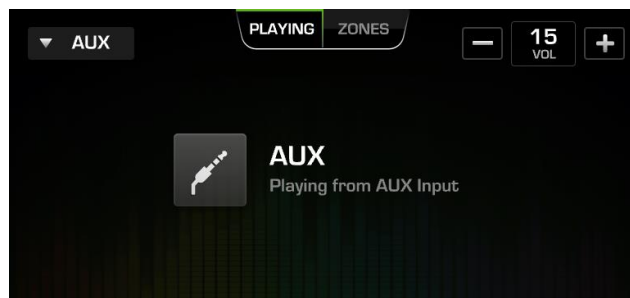
Source: NOAA

There are seven pre-programmed NOAA (National Oceanic and Atmospheric Administration) weather channels available on the PV1100.

When inclement weather conditions exist, review channels 1 through 7 for varied weather reports.



Source: Auxiliary

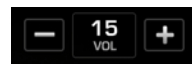


The PV1100 also has an auxiliary pigtail that allows 3.5mm connectors to be utilized.

Plug the 3.5mm connector into the pigtail and that device's contents will be displayed on the screen.

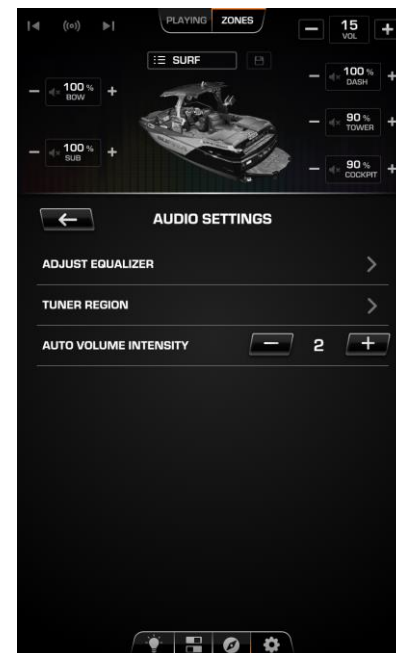
Audio Settings

Shown on the screen to the right are three areas for Audio control.



Adjust the overall volume with the – and + buttons on the top right corner.

Touch the **ZONES** button to display the various zones and their speakers. Touch the – or + buttons to adjust the individual zone volumes. Touch  to mute/unmute that zone.



To save an audio configuration to a specific profile, select that profile from the list and touch



The lower half of the screen displays the Audio Settings from the [Settings](#) menu described later in this document.

Adjust Equalizer allows the Bass, Mid and Treble sounds to be adjusted to your liking.



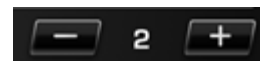
Slide the mid-point block up or down for adjustments.

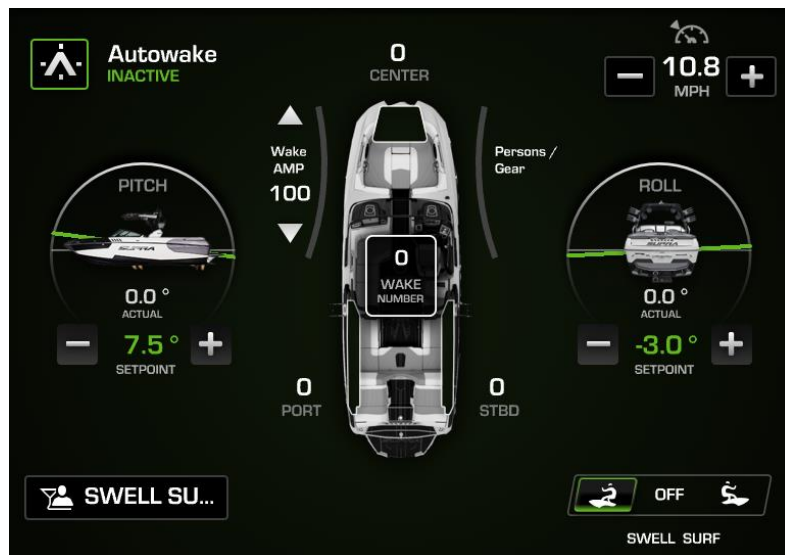
Touch to save or to discard the changes.

Touch to return to the Audio Settings page.

Tuner Region allows you to select the region from which the tuner signals will arrive (Australia, Europe, Europe 50Hz, Japan, North America, South America or Taiwan).

Auto Volume Intensity allows the adjustment of the loudness of the volume when it comes on automatically (i.e., to compensate for wind noise, engine noise, etc.). Adjust the levels using the – and + buttons.





AutoWake* is a patented system that will manipulate the ballast levels in order to achieve and maintain the best possible wake for surfing and wakeboarding. Using an inclinometer (a device that measures angle of pitch and roll) the boat will orient itself for the best boating experience.

* AutoWake™ : U.S. Patent Nos. 8,798,825; 9,499,242; 9,689,395; 9,828,075; 9,873,491; 10,093,398; 10,414,470; 10,640,182; 10,717,502; 10,759,507; 10,858,080; 10,926,848, 10,676,166, 11,130,551, 11,358,68 and other patents pending.

See www.skierschoice.com/patents-trademarks/ for virtual patent marking.

The text on the upper left corner will show one of six current states of the system:

(1) AutoWake Inactive: This will occur when:

- AutoWake is turned off
- Cruise setpoint is below 7mph or above 26mph, or
- When actual speed is below 3mph and within 0.1mph of setpoint.

Below 3mph, AutoWake will use static functionality. Within 0.1mph, AutoWake will use dynamic functionality. The 10 second countdown timer will activate when actual speed is within 0.1 of set speed AND when the boat slows down to less than 3mph. During this state, AutoWake will do nothing.



Once  is pressed to turn on AutoWake, the system will try to first fill front ballast to establish the correct roll, then it will fill all the rear ballast until rear “Amplitude” is achieved. It does this in Static mode when the boat is traveling less than 3 mph and in Dynamic mode when the speed is within .1 of set speed. If AutoWake is active, achieved or in countdown, it will return to inactive if a ballast switch is used, speed is not between 7 mph and 26 mph, or cruise set speed is not within 7 mph and 26 mph. If the display is powered down, it will come back with AutoWake off.

(2) AutoWake Countdown: Once all conditions are met in the AutoWake Inactive state, a countdown of 10 seconds will begin. This countdown will remain if conditions continue to be met. Once the countdown is finished, AutoWake will become active. If any of the conditions change to be outside of the Active limits, the countdown will stop, and the state will go back to AutoWake Inactive. The countdown will start over once conditions are met.

(3) AutoWake Active: This will occur once:

- Set speed is between 7mph and 26mph
- Actual speed is within 0.1mph of set speed
- The 10 second countdown has finished.

After the countdown, the AutoWake system will begin to fill and drain ballasts to reach the desired pitch and roll values. The system will always fill before it starts to drain. Therefore, the side that needs to lower will always fill to 100% before the opposite side begins to drain (to raise that side). For roll, if one side has reached the maximum and the other side has reached the minimum (rear ballasts only), there will be a pop-up that prompts the user to adjust weight in the boat to achieve the desired roll values. The pitch value will have a similar pop-up but will only occur once the roll is finished moving (either achieved or maxed out). When the roll or pitch cannot move, the color of the set points will turn red.

(4) AutoWake Achieved: This will occur:

- Once the current pitch and roll values (average value over 5 seconds) are within 0.25 degrees
- AutoWake becomes Active.

The colors of the set points will be green. The achieved status will remain until the pitch or roll is outside of 0.75 degrees of the set point (in which case it will go back to the AutoWake Active state).

(5) Static AutoWake Active: This state will occur when:

- Boat is turned on
- AutoWake is turned on
- Actual speed is less than 3mph.

The system will attempt to fill and/or drain ballasts to reach a static pitch, roll and amplitude setpoint. If pitch or roll setpoints cannot be achieved, a pop-up will occur indicating this to the driver (AutoWake will remain in this state).

(6) Static AutoWake Achieved: This will occur when:

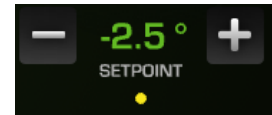
- Boat is turned on
- AutoWake is turned on
- Actual speed is less than 3mph
- Pitch, roll and amplitude values match their respective setpoints.

If pitch or roll setpoints cannot be achieved, a pop-up will occur indicating this to the driver and AutoWake will remain in Static AutoWake Active state. If pitch and roll are achieved and amplitude is as close as possible to setpoint, the AutoWake system will go to this state.

Changing the Pitch and Roll Set Points

The Pitch and Roll Set Points may be changed via the – and + buttons beside the setpoint values:

Once any value has been changed from the settings in the active rider profile, a yellow dot will appear under the changed value.



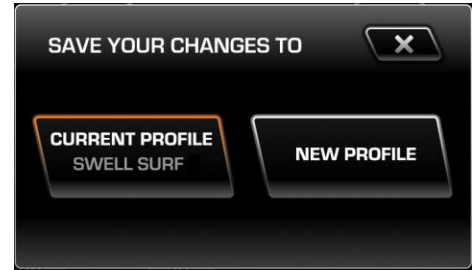
This will also appear at the left side of the screen:



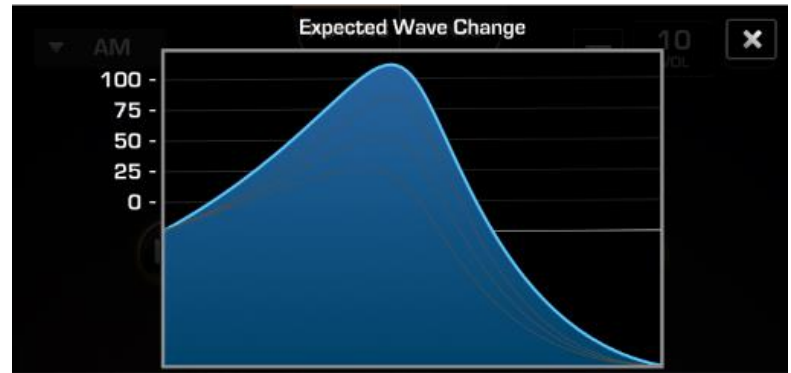
X will give the option to clear or not clear the changes.

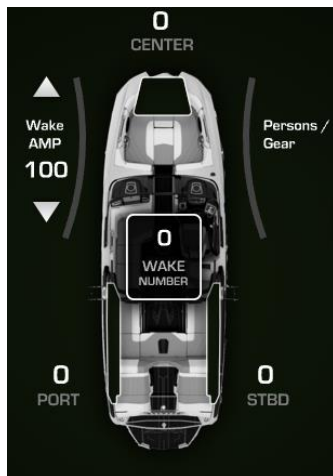
Touching  will display this screen:

Choose to save the changes to the currently selected profile or a New Profile. Create a name for the new profile and choose Done. That profile will then become active.



With AutoWake On, changing the Pitch and Roll setpoints will briefly display a graphic at the top of the screen of the expected wave using the new settings.





Setting the Wake Amplitude

Use this setting to define the amplitude of your wake (0 is mellow and 100 is aggressive). The Wake Amp* bar will fill or empty to the target Wake Amp setting, indicating your total fill level for all ballast.

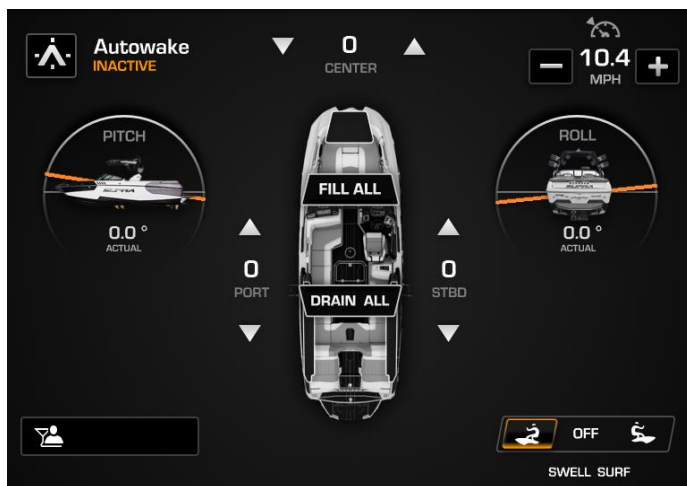
The Persons/Gear on the right is used to reference the current calculated weight of your boat (including passengers, gear and ballast). Weight plays a big part in driving the size of your wake. Adjust the Wake Amp number in relation to the Persons/Gear number to determine your current/actual Wake Number position (i.e., what could be possible if gear and passenger weight was adjusted).

* Amplitude Display: U.S. Patent No. 9,950,771; 10,577,054. See www.skierschoice.com/patents-trademarks/ for virtual patent marking.

Ballast Levels

When AutoWake is off/inactive, the Ballast screen will appear as shown below:

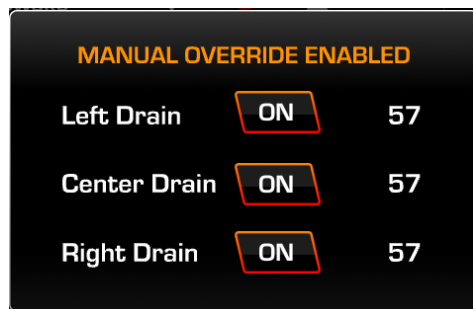
Note: The engine must be running to fill the ballast.



Adjust the Port, Starboard and Center ballast by touching the up and down arrows.

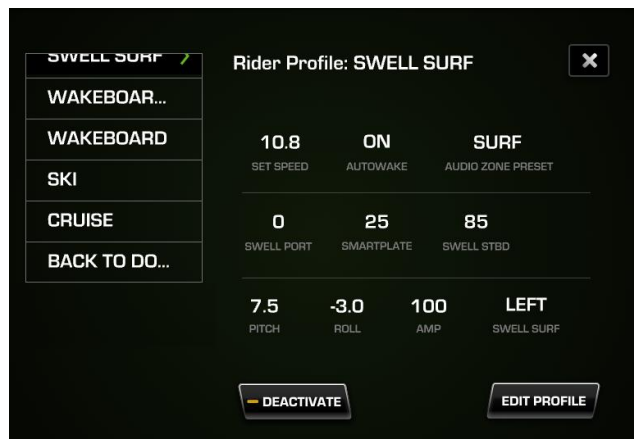
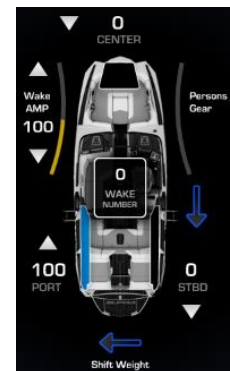
Touch **FILL ALL** to fill all three ballasts at one time.

Touch **DRAIN ALL** to drain all three ballasts at one time. If the engine is not running, the manual override will be enabled and the following screen will appear while the ballasts are draining.



Turn off the draining of the ballast by touching **ON**.

While the ballast is filling or draining, arrows will appear on screen to depict the direction and where to shift the existing weight to compensate for the lost ballast weight.



Rider Profiles

The second screen for the middle of the display will show Rider Profiles, shown on the left. Touch the X to return to AutoWake settings.

Rider profiles have been prepopulated with various settings for you to experience.

Activating a profile:

Step	Action
1	Touch a profile name, and then touch  .
2	The profile name will then display on the bottom left, and the AutoWake screen will appear if adjustments are needed.

Editing an existing profile:

Step	Action
1	Touch Edit Profile. Make any desired changes by highlighting an element to change, then use the up and down arrows to adjust the settings.  resets any changes.
2	Touch the Save Profile or the Save to New (Profile) button to save the changes, or touch the X to close this screen without saving any changes.

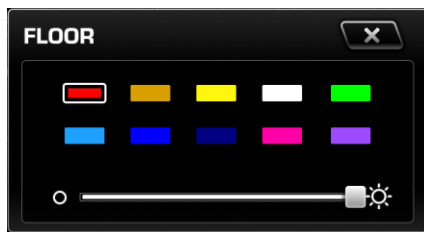


Lights

The first feature of the lower third of the display is the Lights utility. Touch a light's button to turn it on or off. Touch All Off (reverses to All On) to turn all lights off at once.



Touch the color wheel for a light that displays one and the following screen will appear:

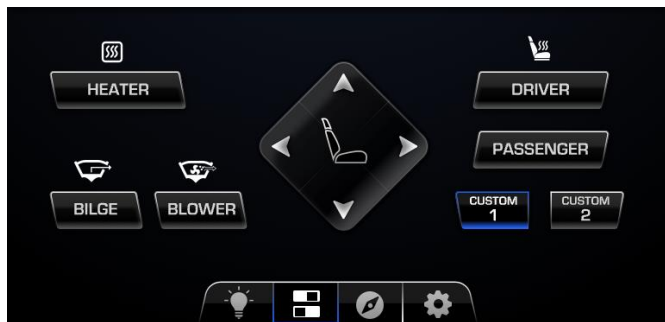


Select a color for that light and adjust the intensity on the slider bar. Touch the X to close the screen.

Two Custom slots exist to create a custom, saved light configuration. Adjust the lights to your preference, and then touch Custom 1 or Custom 2 to save that configuration.

Switches

Touch the Switches tab at the bottom of the display and the screen to the left will appear.



The Heater has three settings: Off, Low and HI. Touch the button repeatedly for the desired setting.

The Driver and Passenger Seat Heaters, Bilge and Blower are all turned on or off by touching them.

There are two preset positions that can be saved for the Driver seat position. Adjust as desired with the directional arrows, then touch and hold Custom 1 or 2 until the button changes colors to save the setting.

The driver's seat can be moved forward, back, up and down with the directional buttons shown for the seat. When the system is restarted, you will be asked if you wish to return the Driver's seat to the saved position; touch the green check mark if yes, or the red X if no.

Autoleveling

Autoleveling is a system that utilizes an inclinometer sensor to calculate the roll of a boat and correct the roll to be as level as possible while staying within the set parameters.

For Autoleveling to occur, ALL of the following conditions must be met:

- The active profile must be Cruise or Back to Dock.
- AutoWake must be On.
- Speed must be greater than 85% of the Setspeed.
- Setspeed must be greater than 7 mph and less than 30 mph.
- The Inclinometer must be Active.
- Roll is either above 1.5° or below -1.5°

Once the above parameters have been met, Autoleveling will retract the plate on the side of the roll fully to 0% and launch the plate opposite of the roll immediately to 40% and begin incrementing in steps of 5% until either the roll has been leveled or the plate has extended to the maximum setpoint of 65%.

Example: If the boat is leaning to the port side the port plate will retract to 0% and the starboard plate will extend to 40%. If the boat is still not level after the initial extension the boat will then increment by 5% until roll has reached level or 65%, whichever comes first. If the boat

overcorrects the roll, the plate that extended will begin to retract in 5% increments until roll is corrected or until the plate is back at 0%. If the plate retracts back to 0%, the plate opposite to the one previously retracted will then begin to extend like it would in normal operating conditions.

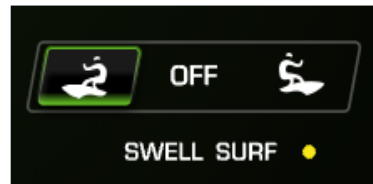
NOTE: Autoleveling is disabled when turning.

When editing the Cruise or Back to Dock profiles, select either Off or Level using the up or down arrows, then choose Save Profile.

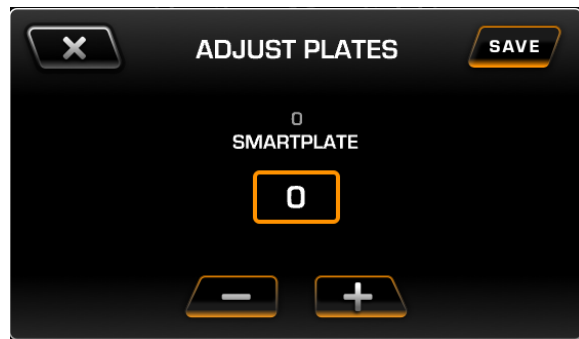
Swell™ Surf and Plates

Swell™ Surf will only engage when:

- Cruise is on
- Current speed is between 7 mph and 14.5 mph, and
- Set speed is less than 14.5 mph.



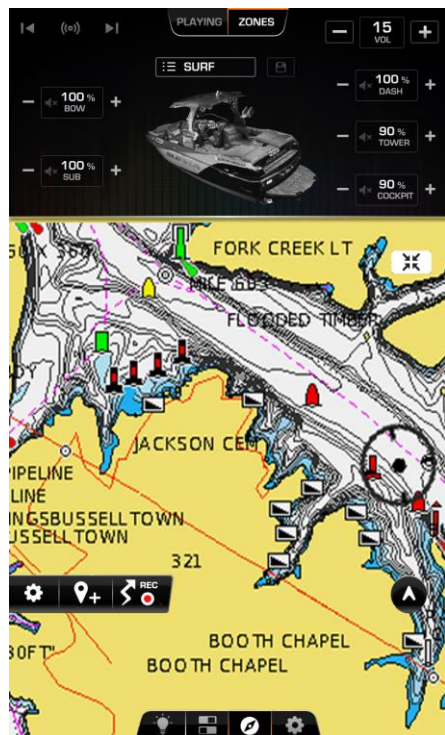
Touch a directional Surf icon to select surfing either on the Left or Right.



Adjust the Swell Plates on the PV1200 to create the optimum wave. Touch the Plates display and then utilize the – and + keys to adjust the Smart plate. Touch Save when done, or X to exit without saving the changes.

The Smart plate may also be edited while editing the profile.

Maps



The Maps utility can be accessed by touching the Maps icon at the bottom of the screen.



Touch the expander icon to make the map screen larger.



This displays the ability to turn on and off the map's grids, text, waypoints, tracks and navigation aids.



This displays the keyboard to name a new waypoint location on the map.



This records the boats movements. When done, touch Stop and the keyboard displays to name the track.



Touching these buttons alternates between North Up and Course Up and will orient the map accordingly.

Touch a part of the screen and drag it to pan to a different part of the map.

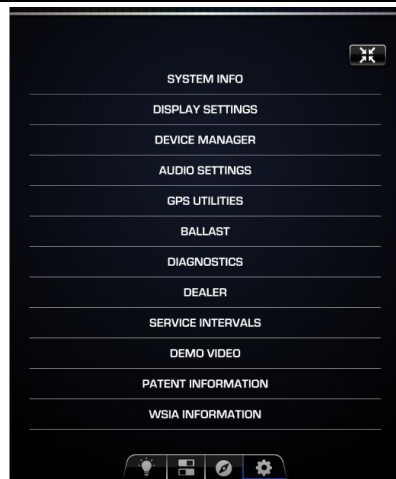
Pinch the screen between two fingers to zoom out.

Place two fingers together on the screen and spread them apart to zoom in.

Settings

Touch the Settings button  to review the following utilities:

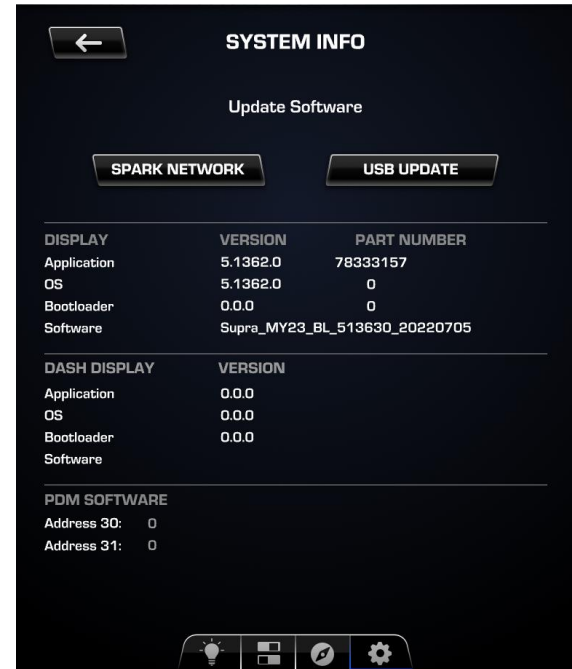
- **System Info:** provides the Application, OS, Bootloader and Software information. Also houses the ability to update the software.
- **Display Settings:** controls the brightness, color scheme, etc.
- **Device Manager:** controls the adding of RT Wireless remotes and Bluetooth connected devices.
- **Audio Settings:** contains settings for the Equalizer, allows the selection of the Tuner Region and adjusts the Auto Volume Intensity.
- **GPS Utilities:** manages the Map utilities and Satellite Status.
- **Ballast:** controls Ballast times, SmartPlate settings and Ballast Calibration.
- **Diagnostics:** provides the Engine and PDM diagnostics and displays Active and Stored Faults.
- **Dealer:** this is a restricted area for Dealers only.
- **Service Intervals:** provides a method to reset service timers for various functions.
- **Demo Video:** provides training videos for components on the craft.
- **Patent Information:** contains the QR code to review the Skier's Choice patent information.
- **WSIA Information:** contains safety information regarding water sports.



System Info

This screen displays the current version and part numbers for the Application, Operating System, Bootloader and Software used on the display, Dash display and PDM software.

To perform an online update to a different version of the software, touch **SPARK NETWORK**, and follow these steps:



Step	Action
1	Connect to one of the Wi-Fi networks shown on the Saved Networks screen that appears. If no networks are shown, touch Add Network and select a displayed network. Enter the network password if one is required.
2	When connected, touch the back arrow to view the Spark Network list of available updates. There could possibly be two items, one for the PV1100 update and one for the PV1200 update. The PV1100 will direct the software to the appropriate display.
3	Touch the download symbol on the right side of each update, and answer the “Are you sure you want to download this update?” question appropriately.

Alternately, attach a USB with the updated software and touch  then follow the instructions shown.



Display Settings

Auto Backlight: this automatically dims the brightness when the Navigation light is on.

Brightness: use the – or + buttons to adjust.

Units: choose US Standard or Metric.

Minimum Depth: use the – or + buttons to adjust the minimum detectable depth in feet.

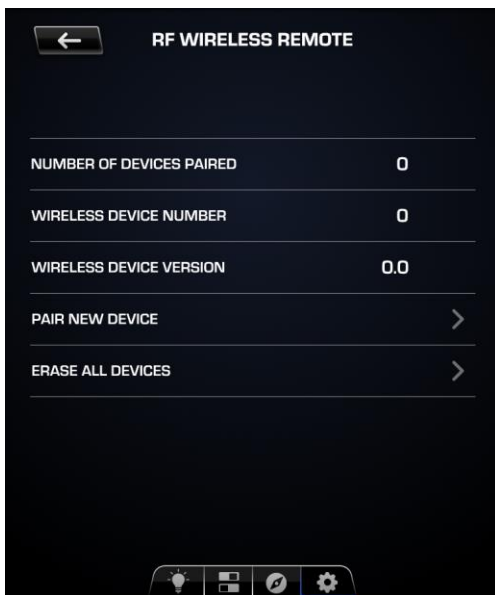
Color Scheme: the current selection has a checkmark beside it.

Device Manager / RF Wireless Remote

This page controls the pairing of wireless remotes to the display.

To pair a new device, touch Pair New Device. Make sure the device is on and touch the green check mark that appears. Press any key on the remote to pair it with the display.

To erase all devices, touch Erase All Devices and follow the prompts.



Device Manager / Bluetooth



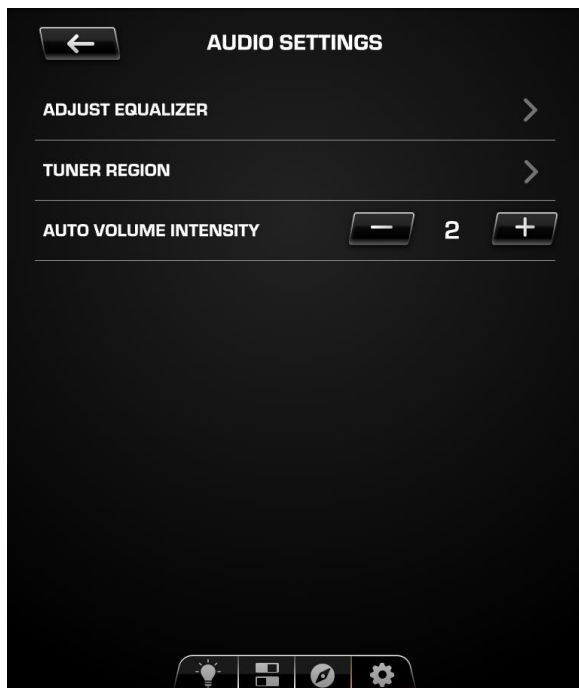
The process for Selecting a Bluetooth Device has been previously described [here](#) within Media Settings of the PV1100.

The bottom half of the screen allows you to enable call and text notifications that will appear on the screen when you receive an incoming phone call or text.

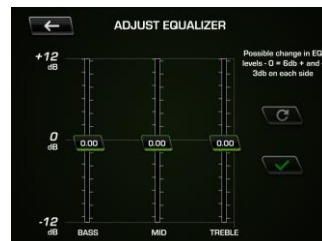
Edit Quick Text Replies allows you to choose or edit a prewritten reply to any incoming texts. When a text arrives, touch Edit Quick Text Replies and choose a reply to be automatically sent.

(Currently only available with Android devices)

Audio Settings



Adjust Equalizer will display the following screen:



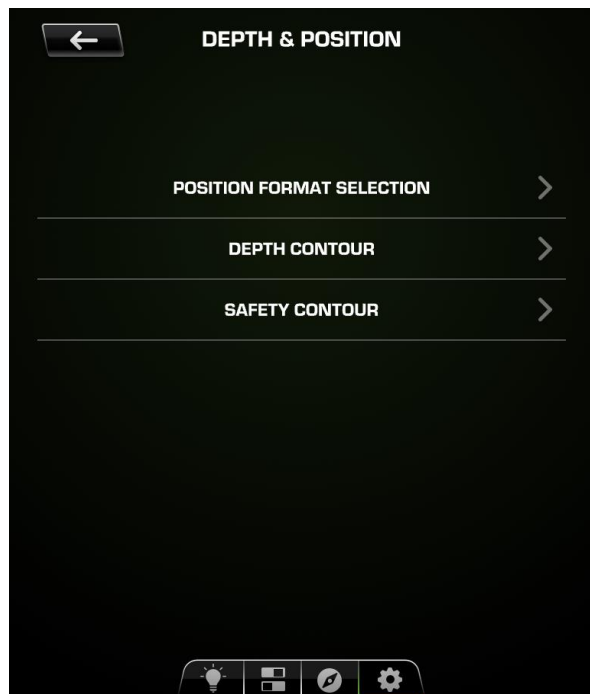
Adjust the Bass, Mid and Treble settings to your liking.

Touch  to save or  to discard the changes.

Tuner Region provides the geographical location from which your radio signal will originate.

Auto Volume Intensity automatically adjusts the volume to overcompensate for wind and/or engine noise.

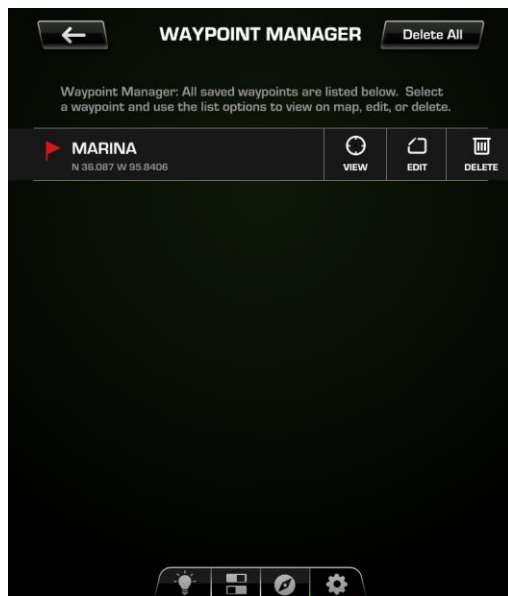
GPS Utilities



Depth and Position:

Within this section are three subsections:

- 1) Position Format Selection: controls how the positions on the map are shown. Choose between Degrees and Decimal Degrees; Degrees, Minutes and Decimal Minutes; or Degrees, Minutes, Seconds and Decimal Seconds
- 2) Depth Contour: will denote contour lines out to the depth chosen. For example, if the depth of 66ft is chosen, the map will show depth lines out to 66 feet.
- 3) Safety Contour will show shaded areas of the map that indicate shallow or deep water (lighter is deeper, darker is shallower). Similar to Depth Contour, if 66ft is chosen for safety contour, the map will show shaded areas out to 66 feet.



Waypoint Manager

This section lists all the saved Waypoints from the Map utility.

Touch  to delete the existing Waypoints.

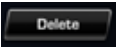
Touch View to see where the Waypoint is located on the map.

Touch Edit and the following screen will appear:



Touch  to edit the Waypoint name.

Touch an icon picture to represent the Waypoint.

 will ask if the selected Waypoint should be deleted. Select the green check mark if yes, or the red X if no.

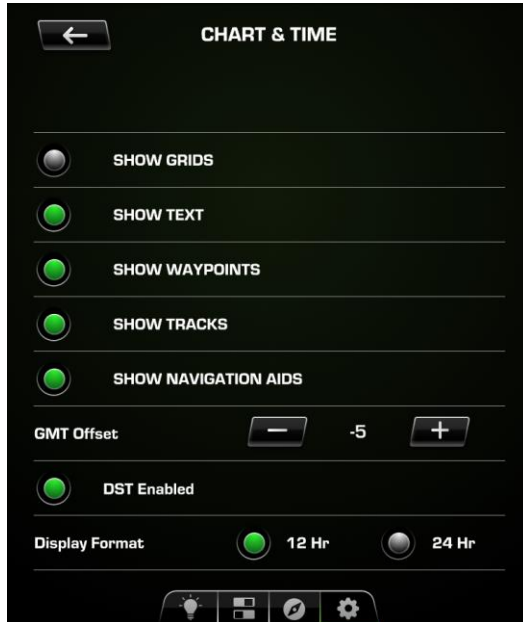
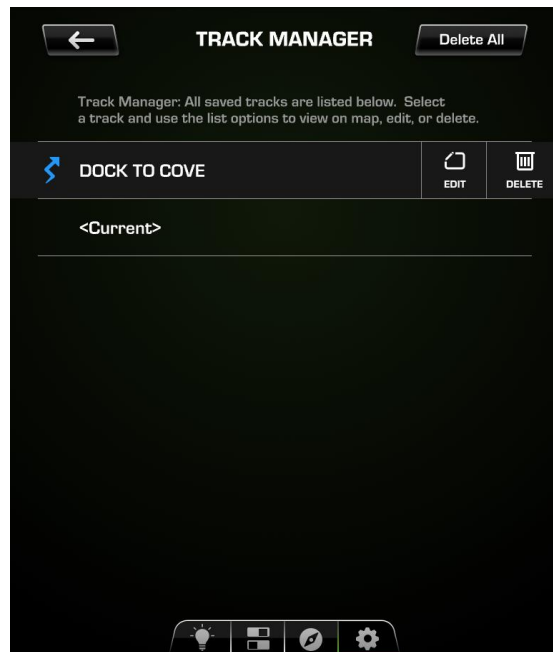


Chart and Time

This section allows you to choose if Grids, Text, Waypoints, Tracks and Navigation Aids will be shown on the Map.

This section also provides a way to offset the GMT time by choosing the number of hours difference between GMT and your location.

Lastly, choose to enable or not Daylight-Saving Time and choose between a 12-hour (1:00pm) or a 24-hour clock display (13:00).

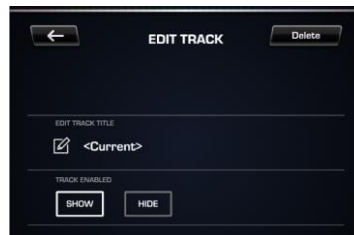


Track Manager

This section provides a list of the previously saved Tracks and the current track being traveled.

Touch  to delete the existing Tracks.

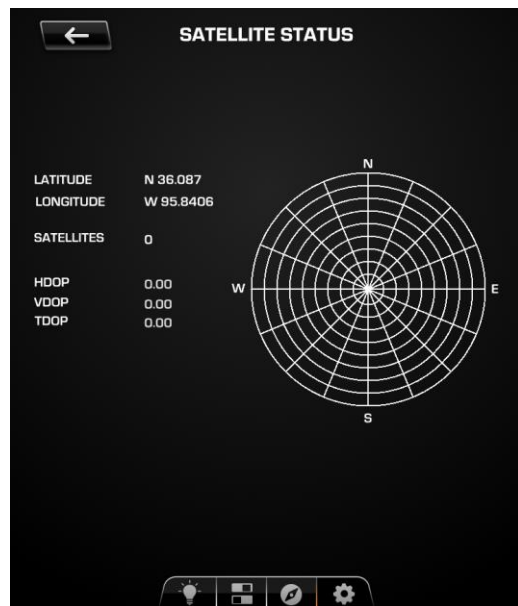
Touch Edit and the following screen will appear:



Touch  to edit the Track name.

Highlight a Track and choose whether to show or hide it.

Touch  to delete the highlighted Track.



Satellite Status

This section shows all the detectable satellites transmitting signals in the boat's area.

Ballast

The screenshot shows a control interface for a ballast system. At the top, there is a back arrow and the title 'BALLAST'. Below this, there are three sections: 'BALLAST TIMES', 'SMARTPLATE', and 'SUPRA LAUNCH SYSTEM'. Each section has a title, a description, and a control area with minus and plus buttons and a numerical value. The 'BALLAST TIMES' section has three rows: 'PORT' with 6 minutes and 30 seconds, 'CENTER' with 7 minutes and 30 seconds, and 'STBD' with 6 minutes and 30 seconds. The 'SMARTPLATE' section has three rows: 'CROSSOVER POINT' with 75%, 'SMARTPLATE DOWN' with 100%, and 'SMARTPLATE UP' with 50%. The 'SUPRA LAUNCH SYSTEM' section has a single row with 'OFF'. At the bottom, there is a 'BALLAST CALIBRATION' section with a right arrow. A bottom navigation bar contains icons for a light, a screen, a compass, and a gear.

BALLAST TIMES		MIN	SEC
PORT	6	30	
CENTER	7	30	
STBD	6	30	

SMARTPLATE	
CROSSOVER POINT PERCENT OF SETSPEED	75
SMARTPLATE DOWN USED WHEN SPEED < CROSSOVER	100
SMARTPLATE UP USED WHEN CRUISE OFF AND SPEED > 15 MPH	50

SUPRA LAUNCH SYSTEM USED WHEN SWELL SURF IS OFF	
	OFF

BALLAST CALIBRATION

The first section of this page controls how quickly the ballast fills and drains. Use the – and + buttons to establish the minutes and seconds for the Port, Center and Starboard ballast bags.

The second section of this page concerns the SmartPlate™:

Crossover Point: Set the percent of set speed at which the SmartPlate activates to the position set in the rider profile.

SmartPlate Down: Set the percentage at which the SmartPlate will be tilted down when the speed is less than the crossover point.

SmartPlate Up: Set the percentage at which the SmartPlate will be tilted up when the speed is greater than 15 mph and the cruise is off.

Supra Launch System: enable (Dynamic or Fixed) or disable (Off) this system to be used as a launch aid when Swell Surf is turned off.

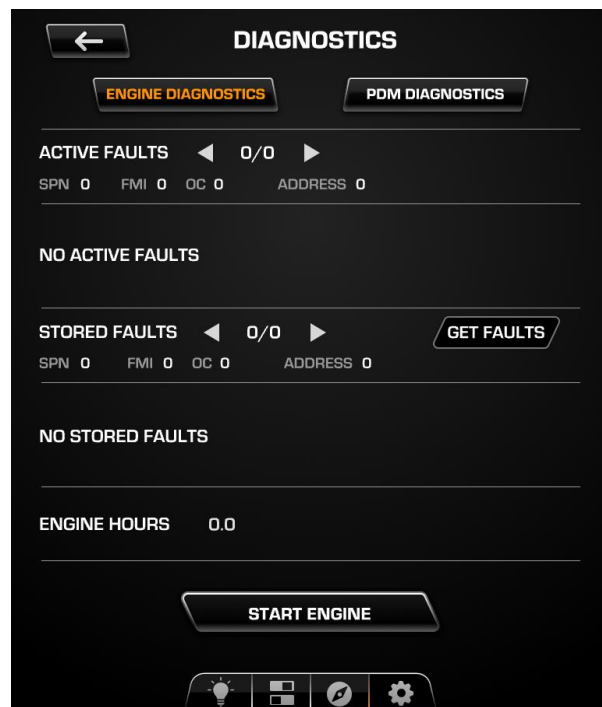


BALLAST CALIBRATION

PORT LEVEL	Reset	Full	Empty
CENTER LEVEL	Reset	Full	Empty
STBD LEVEL	Reset	Full	Empty

Ballast Calibration: when the ballast is full or empty and the display is showing that it is not full or empty, the ballast will need to be recalibrated. Touch the appropriate button that depicts the current state of the ballast and it will be calibrated (i.e., if the Port Ballast is full, touch Full. If it is empty, touch Empty).

Diagnostics

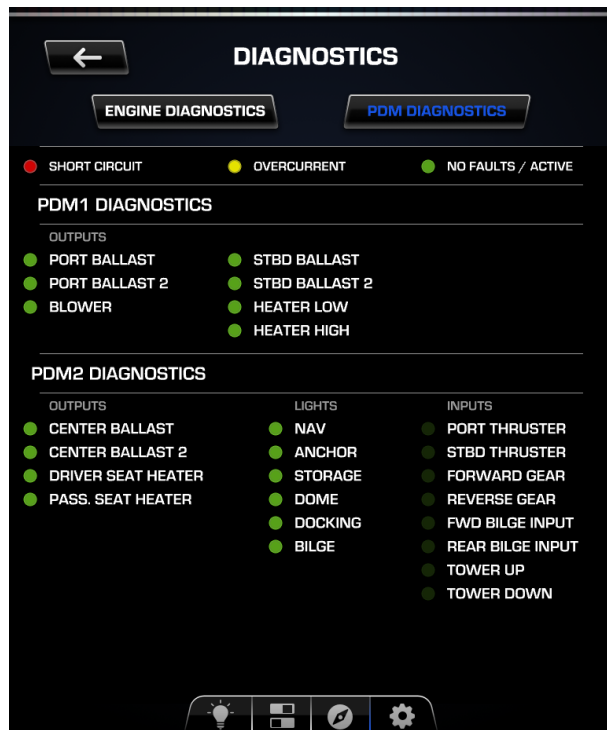


Engine Diagnostics

This screen will display the active and stored faults for the engine. Touch Get Faults to retrieve any stored faults.

This screen also displays the Engine Hours accumulated for the engine.

The Start Engine button will start the engine when it is turned off.



PDM Diagnostics

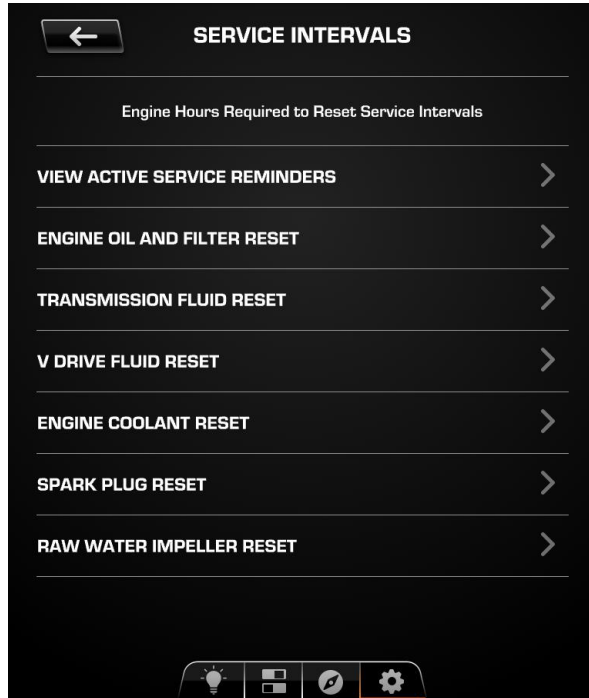
This screen provides diagnostics for the Power Display Module.

 A red light means a short circuit is present.

 A yellow light means there is an overcurrent.

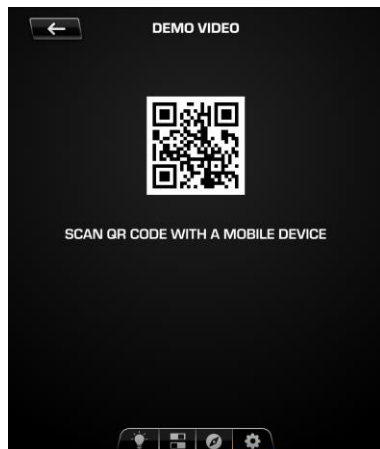
 A green light means there are no faults and the circuits are active.

Service Intervals



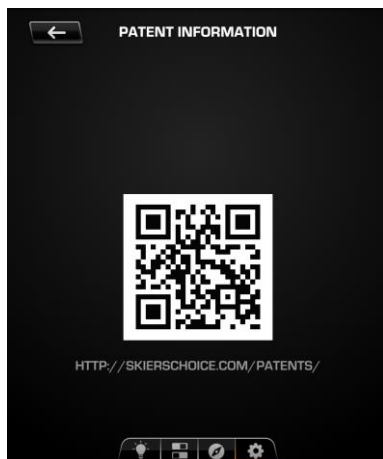
This screen allows the resetting of the service intervals. The ability to utilize the Engine Hours function is required to reset the service intervals.

When the service has been performed (i.e., engine oil and filter change), touch that selection and answer Yes to “Reset this interval?”



Demo Video

Scan this QR code with your mobile device to review a demonstration video for the boat.



Patent Information

Scan this QR code with your mobile device to display all patent information.

WSIA Information

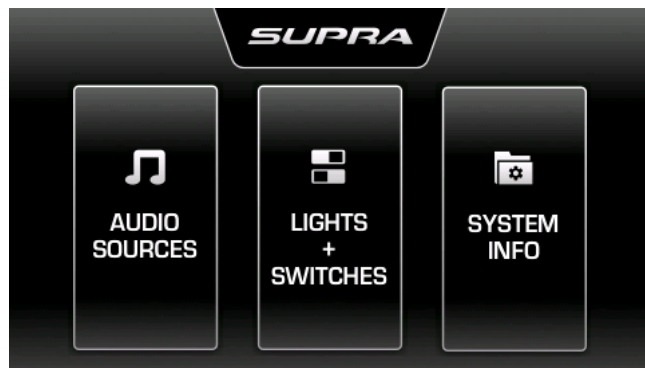
View boating activities' safety information here.



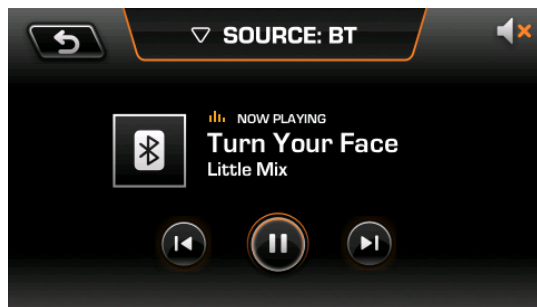
PV450 Features

Home Screen

The PV450 serves as an additional display/controller for the Audio, Lights and Switches and System Info utilities.



Audio Sources



Like the Audio function within the PV1100, the PV450 allows the various sources to appear. Touch the Source area and choose between AM/FM Radio, Bluetooth, USB, NOAA and Aux.

Touch the  to return to the Main screen.

Touch  to mute the stereo.

Lights and Switches



Simply touch a light or switch to turn it (or All) on or off.



refers to the Heater.



refers to the Passenger Seat Heater.



System Info

Like the System Information screen in the PV100, this screen provides version and part numbers for the Application, Operating System, Bootloader and Software, along with a method to update the software.



Touch  and follow the prompts to update the system's software.

General Troubleshooting Guide

Display appears not to work or doesn't come ON.

1. Display could be in *sleep* mode. Touch a key on the keypad or touch the screen to activate the display.
2. Check for loose connections at battery and display unit.
3. Check for reversed polarity on the power connections.
4. Verify battery has a minimum voltage of 6 Volts.

Display resets or goes OFF when starting engine.

1. Check display supply wires are connected properly to battery.
2. Verify battery is charged properly.
3. Check battery for efficient starter current.

Display has no backlight.

Contact your Supra service center.

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