XR500

ALL-IN-ONE system for bait boat

Basic Operation Guide

ENGLISH

TOSLON®

www.toslon.com

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ABOUT

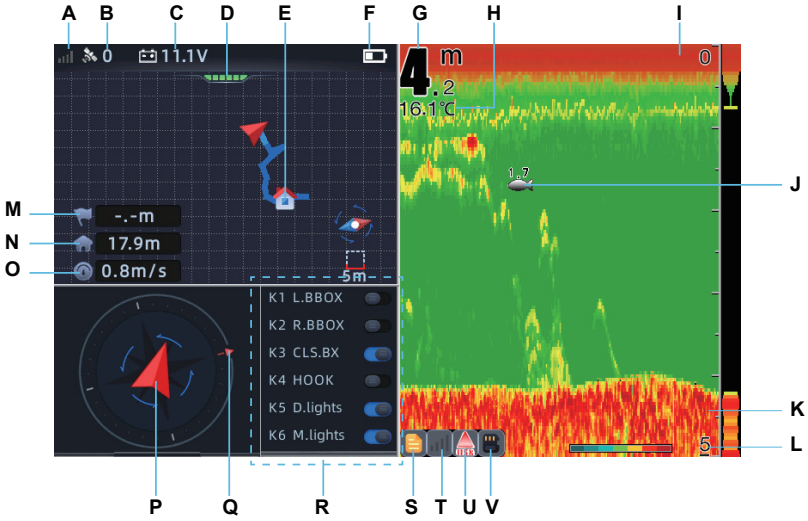
This document describes the basic operation of the XR500 unit. For the latest version of this document and other user guides, we recommend you download the formal document from our website: www.toslon.com. .

SPECIAL WORDS

The following words were specially defined for XR500 using instruction:

CCS:	Cruise Control System
BCS:	Boat Control System box of XR500
L.BBOX:	left bait-box
R.BBOX:	right bait-box
CLS.BX:	close the bait-box
M.light:	main light
D.lights:	daytime running light
T.light:	tail light
Config:	configuration
Def.:	definition
SPD:	speed

WHAT'S ON THE DISPLAY



A Signal strength of Radio for remote control system (*note-1)

B Number of satellite

C Voltage of bait boat

D Mode of boat condition

E Home point

F Battery strength of display

G Depth Readout

H Water Temperature

I Surface clutter

J Fish symbol

K Structure

L Depth range at bottom

M Distance to target

N Distance to Home

O Speed of boat

P Indicator of boat heading direction

Q The north direction

R Condition of boat operations

L.BBOX: the left bait box was opened or closed
R.BBOX: the right bait box was opened or closed
CLS.BX: the bait box was closed
HOOK: the hook was released or not
D.light: the daytime running light was on/off
M.light: the main light was on/off

S Indicator of **[Fn]** button states

T Signal strength of Radio for echo sounder (*note 1)

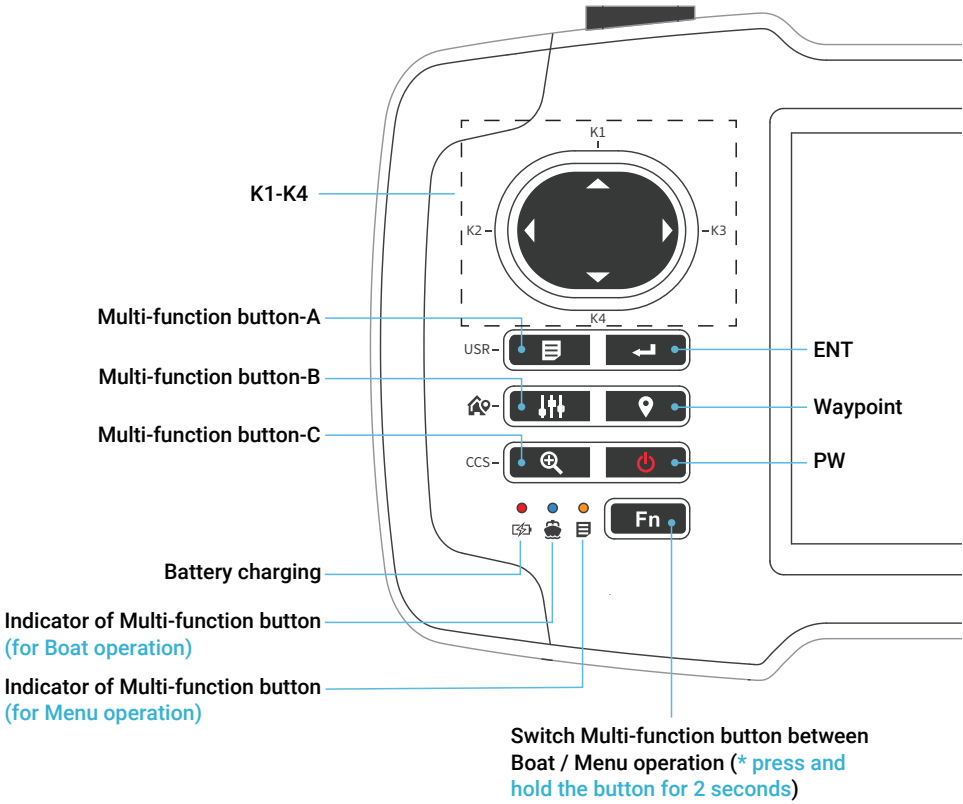
U Sonar beam (115 / 455khz)

V SD Card in

***Note**

1: There are 2 radio system inside xr500, one for remote control, another for echo sounder. These 2 radios were optimized for difference speed rate of communication, to archive better reliability of boat control & sonar image.

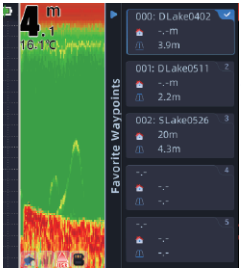
KEYPAD INSTRUCTION



Button	Press		Long Press
	Boat Operation	Menu Operation	
Multi-function button-A	User definied (default "Favourite waypoints")	Enter into menu operaiton	
Multi-function button-B	Quick Marker	Enter into K1-K6 Kay operation	Saving Home point
Multi-function button-C	Active CCS mode (when joystick was gaven speed)	Zoom In/Out map	
K1-K4	Excute actions of boat (open/close bait box, release hook, etc)	Move cursor	
Ent	Confirm Settings / Enter into SHORTCUT MENU		
Waypoint	Enter into waypoint list		Back to Home point
PW	Switch 3 main display pages / Exit current dialog box		Power On / Off

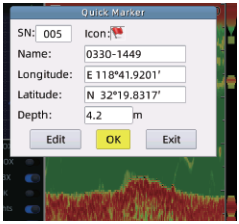
KEYPAD INSTRUCTION

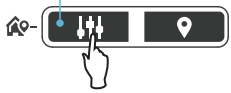
Fn Indicator of Multi-function buttons are in Boat operation status



Press to enter into “Favourite waypoints”

Note: the default setting of USR button can be defined by users (for detailed information, please refer to Page 12).

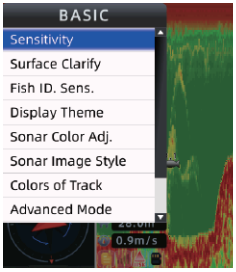


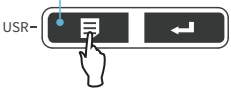


Press to enter into “Quick Marker”

Active CCS mode (when joystick was gaven speed)

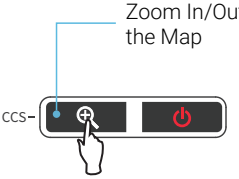
Fn Indicator of Multi-function buttons are in Menu operation status

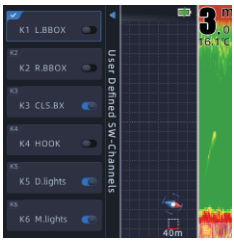


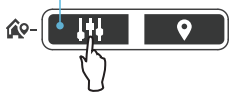


Press to nter into Menu Operation

Zoom In/Out the Map







Press to enter into “User Defined SW-Channels”

WHAT'S THE SPECIAL

XR500 is an ALL-IN-ONE system for R/C boat, which combined remote with advanced sonar, GPS and autopilot function.

SONAR

Advanced echo sounder with HD image, 8 Color Palette for daytime & dark night fishing.

Route plotter with depth information, the route can be reload as 2D map.

Autopilot

Autopilot system with the 10th generation high accuracy GNSS receiver.

Compasses at boat & handheld side, the boat heading is also given when in stationary state.

5 favorite spots can be defined out of 100 saved waypoints.

Click the Joystick to select a point on map, and start autopilot.

Boat Controlling

8 Channels

Support up to 8 channels of remote control.

Quiet arrival feature to eliminate the noise when boat approaching the spot.

CCS mode to free your hand, one button to active cruise control system, boat always run in straight line.

Arrived actions: can config to release bait-box, hook, light after boat arrive target.

Fail-Safe: automatically return to HOME point after signal lost lasting 20s.

Others

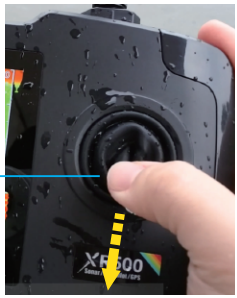
- SD card storage support import/export settings, waypoints, and software upgrade.
- *.tslw log file support, can record all sonar & GPS info to SD card.
- Google kml file support.

Using CCS mode

To active CCS (Cruise Control System) mode, just press the button (as shown in the figure) when boat is running (the joystick is in speed condition). Then the boat will keep running in a straight line under a certain speed.

☞ **NOTE:** under the CCS mode, you can steer the direction of the boat by controlling the joystick to left/right side without terminating the boat running.

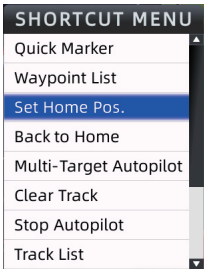
☞ To terminate the CCS mode, just pull the joystick down.



Using Autopilot mode

1) Set HOME point

There are 2 methods to set the HOME point:



1.1) Set HOME point from **SHORTCUT MENU**

- Press **ENT** button to enter into **SHORTCUT MENU.**
- Select **Set Home Pos.**
- Select **Yes** to set the Home point.

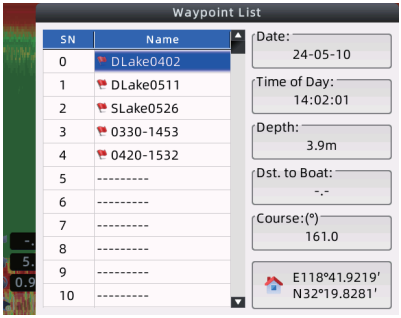
1.2) Quickly Set HOME point

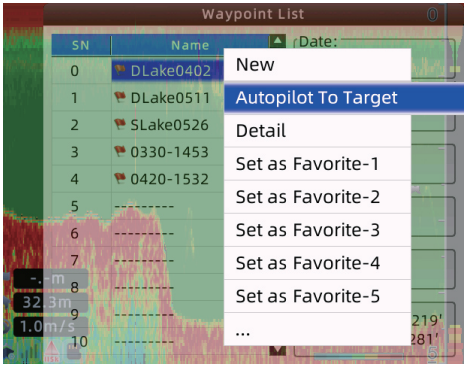
- Long press the button.
- A message “Set current position as home position?” appears.
- Select **Yes** to set the Home point.

2) Start the autopilot.

2.1) Load a prestored waypoint from waypoint list to start the autopilot.

- Press the button to enter into **Waypoint list.**
- Select one waypoint and press **ENT** button.
- Select “Autopilot to Target” to start the autopilot.





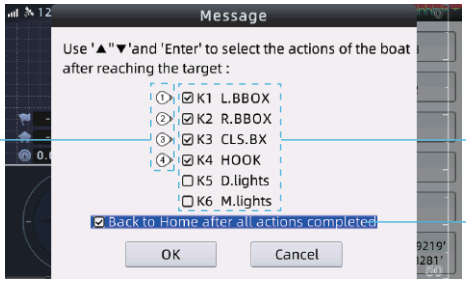
START USING

*** Arrived Actions:**

As soon as one waypoint was load for autopilot, an message will appear to let you choose the actions (open bait box, release hook, trun on light, etc) which the boat will excute when it arrive the target.

And you can also enable the option to let the boat back to Home position automatically after it finish all these actions.

The S/N before check-box of K1~K6 represents the order in which the actions are performed.

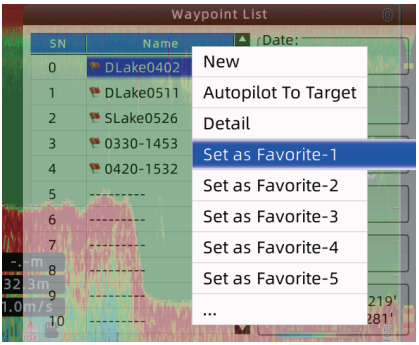


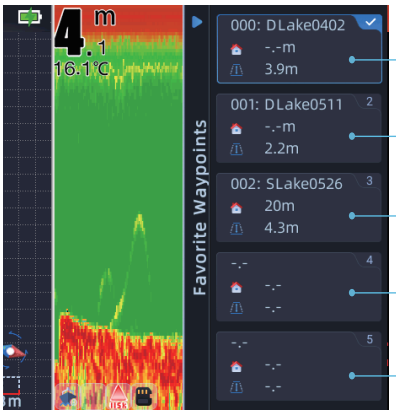
*** Favorite Waypoints**

To quickly get the waypoint which you favorite, you can choose 5 waypoints to define them as favorite spots.

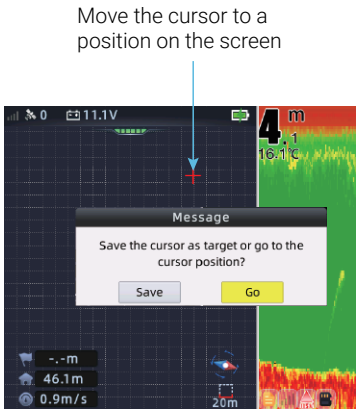
How to set the Favorite Waypoints?

- Enter into the waypoint list to select one, then press **ENT** button.
- Choose to set it as one of the five favorite waypoint.





2.2) Pick up a waypoint on the screen to start the autopilot.
- Move the cursor to a position on the screen.
- Press **ENT** button, a message appears:"Save the cursor as target or go to the cusor position?"
- Select **Go** to start the autopilot.

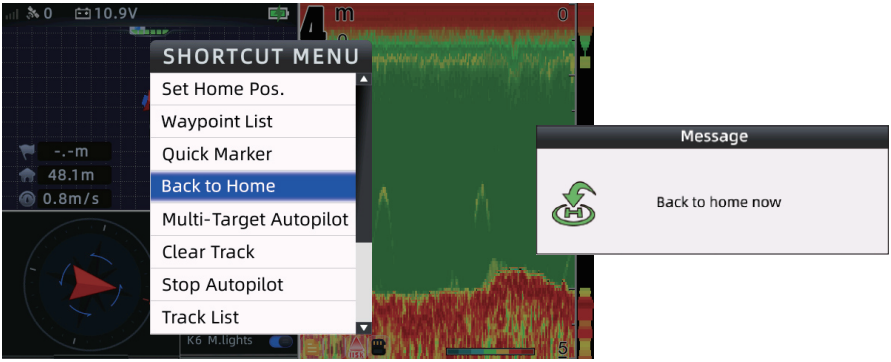


Note: to start the autopilot by picking up waypoint on the map, please be sure the indicator of Multi-functions button are in Menu operation status.

3) Return to Home

Press and hold the **[Waypoint]** button to quickly return the boat to the Home point.

Also, you can press **Ent** button to enter into **SHORTCUT MENU**, then select “Back to Home”, the boat will return to Home position automatically.

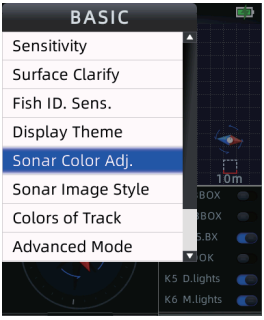


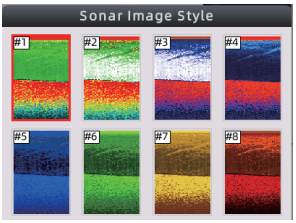
MENU OPERATION

BASIC

Sonar Color Adj

To choose an sonar image style.

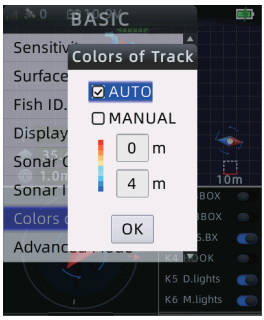




Color of Track

On the route, different color means the depth changing of the water while the boat is running.

From the Rute color, you can see the overall depth condition of water.

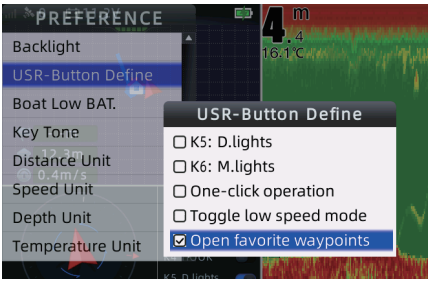


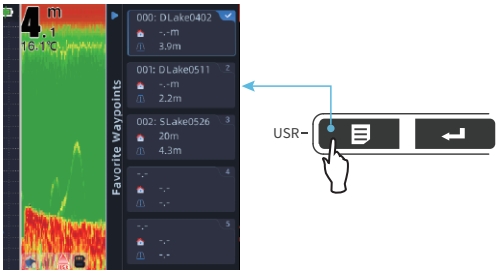
PREFERENCE

USR-Button Define

The default setting of USR button is “Favorate waypoints”.

You can choose to define it as other option, like turnning on light, one-click operation, etc





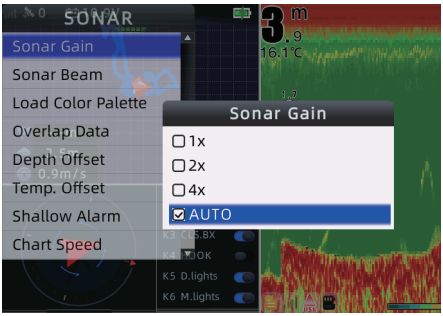
MENU OPERATION

SONAR

Sonar Gain

The gain controls the sensitivity of the hardware receiver. A higher gain makes the sonar more sensitive to echo returns, allowing it to display weaker targets.

If the gain is set too high, the image might be cluttered with background noise.



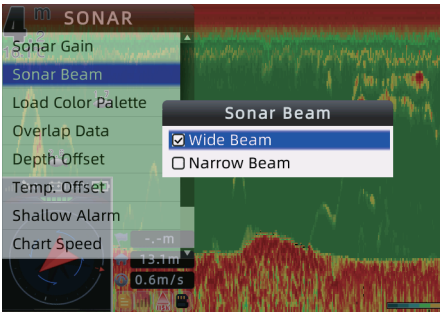
Sonar Beam

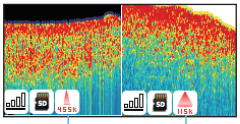
Choose suitable sonar beam for using in different depth water.

1) For most lake, [Wide beam] is recommended when water depth more than 1.5m.

2) For ultra-shallow water, [Narrow Beam] is recommended when depth less than 1.2m. and setting [Sonar Gain] to 4X can help to find more details.

3) For accurate depth survey, [Narrow Beam] provide smaller sonar footprint, and give more accurate depth reading.





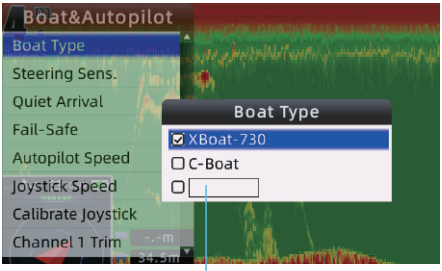
Narrow Beam (455KHz)

Wide Beam (115KHz)

BOAT & AUTOPILOT

Boat Type

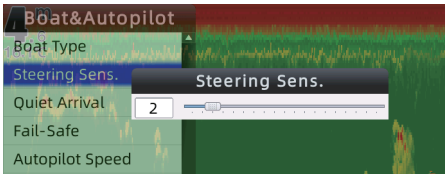
XR500 can be used by most of bait boats. And for all other boat (except for XBOAT730 and CBOAT). After the configuration, please check and choose the right boat type for your bait boat.



After configuration, here will display the model no. of other boat.

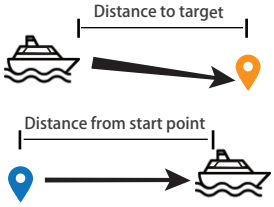
Steering Sens.

Adjust the steering sensitivity of autopilot, normally higher speed, lower steering-sens.



Quiet Arrival

Enable the option, the boat will automatically decrease the speed at the setting range when it leave the start point or before approaching the target.

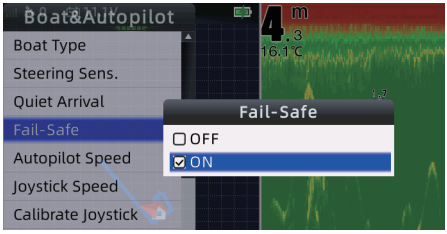


NOTE: [Quiet Arrival] mode is only needed for high speed boat, or the boat which is noisy while running.

- Power: decrease the speed in a set propotrion
- Range: decrease the speed within a set distance when the boat leave the start point or before approaching the target.

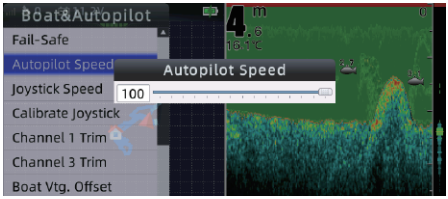
Fail-Safe

Enable this option, boat will return Home position automatically after signal lossing last 20s.



Autopilot Speed

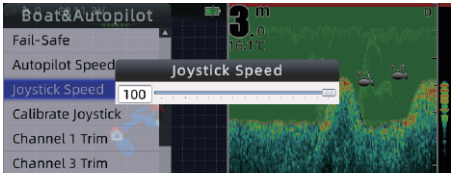
To limite the max speed which the boat can reach when it is working in autopilot mode.



MENU OPERATION

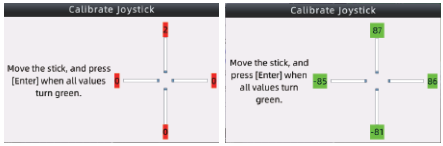
Joystick Speed

To limite the max speed which the boat can reach when the joystick was push to the max position.



Calibrate Joystick

To calibrate the Joystick to guarantee it wiil be in full speed when was push to the maximum position.



Channel 1 Trim
Channel 3 Trim

Channel Trim is used to adjust the middle point of each servo, which is especially useful when this middle point cannot be mechanically fine adjusted.

CH1: to correct the running direction of rudder.

CH3: to correct the running direction of motor.

Switch Definition

Used to define the function of K1-K6 button for using with other boats.

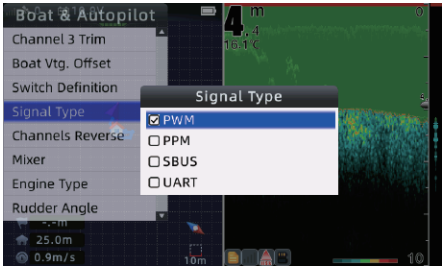
- K1-K6: to define the name of boat action for K1-K6 button.
- CH: choose a channel for the defined button.
- Lock: enable to lock the button for not being revised.

MENU OPERATION

Signal Type

Choose signal type for the boat.

- PWM: to match the boat with PWM signal.
- PPM: to match the boat with PPM signal.
- SBUS: to match the boat with SBUS signal.
- UART: to match the boat with UART signal.



Channel Reverse

Is used to correct the running direction of motor (or rudder) after you found them did not run the correct direction as expected.

For example, if your boat are with 2 engines, and you found the engine suck in air (or the boat turning around on the water). When you want it to go straight, then you need to enable the channel reverse.

CH1: to correct the running direction of rudder (for boat with single engine).

CH3: to correct the running direction of motor.

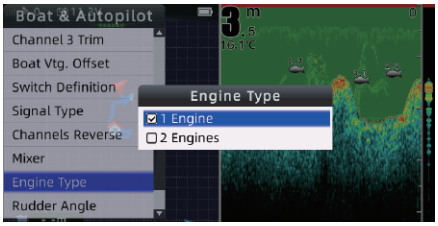
Mixer

If the boat was built with standard commercial ESC & SERVO, normally you need enable the Mixer option.

Engine Type

Select engin type for the boat.

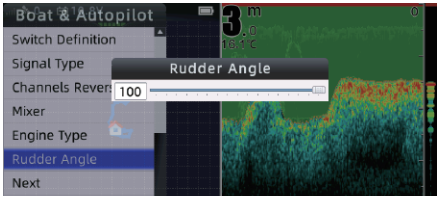
- 1 Engine: boat with one engine and one rudder.
- 2 Engine: boat with two engines.



Rudder Angle

Set the limitation of the channel-1.

Normally only when channel-1 was connected to servo, this parameter need to be changed.



SPECIFICATIONS

Handheld Device	TFT Color Screen	5 inch, HD 800*480pixels
	Power	type-C input, DC5V 3A
	Battery	3pcs 18650 (Optional)
	Built-in Li-ion Charger	Yes
	Battery life	8 hours
	AC-DC power supply	Optional
	Water Proof	Splashproof
	Radio frequency	2.4GHz FHSS
	Radio Power	20dBm (300m RC distance , Depends on usage environment)
	Case size	268*120*42mm
BCS-BOX	Signal Interface	PWM,PPM,Uart(optional)
	Channels of Receiver	8
	GNSS/Compass Port	RS232, 19200bps
	Fail-safe	YES (automatically return to HOME point after signal lost lasting 20s)
	Power Input	DC 3.5/1.35mm DC6~16V/200mA
Echo Sounder	Max. Depth	40m
	Sonar coverage	60 degree
	Ping Rate	6Hz
	Sonar Software Engine	Gen3
	Hardware Gain Adjustable	Yes
	User Defined Color Scheme Support	Yes
	Color Route to Indicate Depth(2D Map)	Yes
	tslw logger for SonarViewer	N/A
	Power Input	DC 5.5/2.1mm DC9~16V/200mA
Navigate Sensor	GPS Accuracy(CEP)	1.5m(SBS or QZSS) / 2.5m
	Compass at Boat Side	Yes
	Compass at Dispaly Side	Yes
	Other Sensors	3-axis Magnetic Field Sensor and 3-axis accelerometers
Autopilot	Two propellers boat support	Yes
	propeller & Rudder boat support	Yes
	Steering Sensitivity Adjustable	Yes
	Push-Go Key(shortcut)	Yes
	Pick up waypoint form map	Yes
	High speed boat support	1~5m/S
	Cruise Control System	Yes
	Quiet Reach Mode	Yes， lower speed when approach the target
	Favourite Points ShortCut	5 favourite waypoints shortcut
	Arrive Actions	Yes, open bait-boxes, release hook as config
	Waypoint Number	100 with depth & time info

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