

KSN55-C PRO

USER MANUAL Ver.2.01



Dual Channel AIS Receiver

Model: KSN55-C PRO



SAFETY WARNING:

IT IS IMPORTANT TO KNOW AS AN ELECTRONIC AUXILIARY EQUIPMENT FOR DATA TRANSMISSION OF SHIP AIS PILOT PLUG, THE PILOT OF SHIP SHOULD ALWAYS BE ALERT TO THE TRAFFIC IN THE SURROUNDING SEA AREAS AND ENSURE THE SAFETY OF NAVIGATION WHILE USING THIS EQUIPMENT. IN THIS REGARD, THE COMPANY SPECIFICALLY DECLARES THAT IT WILL NOT BEAR ANY SAFETY ACCIDENTS AND LEGAL LIABILITY ARISING FROM THE USE OF THIS EQUIPMENT.



SAFETY POWER ON/OFF: PLEASE SWITCH THE MACHINE ACCORDING TO THE MANUAL STEPS. MISOPERATION MAY LEAD TO EQUIPMENT DAMAGE.



INTERFERENCE: ALL WIRELESS DEVICES ARE LIKELY TO BE INTERFERED AND AFFECTING THE USE OF EQUIPMENT.



MAINTENANCE OF EQUIPMENT: ONLY PROFESSIONAL TECHNICIANS CAN REPAIR THE EQUIPMENT OR RETURN TO FACTORY.



SELECTION OF ACCESSORIES: USE FACTORY APPROVED ACCESSORIES AND PREVENT BATTERIES FROM BEING USED IN HIGH TEMPERATURE ENVIRONMENT.



WATERPROOF: THIS EQUIPMENT IS WATERPROOF, BUT IT CAN NOT BE PUT INTO THE WATER.

FEATURES:

- Independent Dual channel AIS Receiver, receiving channels CH1 87B and CH2 88B AIS message;
- AIS receiver and ship's AIS pilot plug working mode;
- The AIS PILOT PLUG female connector with IMO standards, suitable for all ships;
- Built-in an automatic sensor to correct polarity reversed issue (TX+- or RX+-) in some ship's AIS pilot plug socket;
- LCD true color display for working status;
- Built-in ROT sensor, Accuracy 0.5°/m, Resolution 0.1°/m;
- Built-in Dual band L1/L5 GNSS, Concurrent reception of up to 4 GNSS (BeiDou, GPS, Galileo, Glonass),
- GNSS HDOP: Autonomous < 1.5m average; SBAS < 1.0m average; Speed < 0.1m/s;
- Wi-Fi, Bluetooth and USB all work at the same time and can be closed by menu.
- Wi-Fi 2.4G, allows Max 3 clients to access at same time;
- Wi-Fi SSID name and network password can be changed manually;
- Removable battery duration 20~40hrs , battery status post to App(Supported by SEAiq);
- Own GNSS&ROT output at NMEA sentence together with ship's AIS at same time(Can be selected ON/OFF in unit menu or Apps);
- Water Proof IPX55;

SPECIFICATIONS:

Independent AIS Receiver	
Receiving Channels	Dual channels CH-1 87B,CH-2 88B
Frequency Range	161.975MHz~162.025MHz
Channel Baud Rate	9600bps
Channel Bandwidth	25KHz
Receive Sensitivity	-117dBm @PER≤20%
GNSS Navigation	
Channel	50 Chanel
Message	GNSS at NMEA 0183
Sensitivity	Tracking:-162dBm Reacquisition :-160dBm
Work mode	Concurrent reception GNSS (GPS, Galileo, BeiDou)
Time-To-First-Fix	Cold Start 30s,Warm Start 29s,Hot Start1s
Accuracy(Average)	HDOP <2.5m,SBAS <2.0m,Velocity 0.1m/s
Connections	
Wi-Fi	2.4Ghz 802.11 b/g/n, AP mode Max 3 clients
HOST TPC/IP Address	192.168.2.1
PORT	8888
Bluetooth	2.4Ghz EDR&BLE
USB	USB Serial port
Power Supply	
Input	DC 5.0v,1.2A
Battery Capacity	7000mAh
Duration-of-Battery	20-40 hrs approx.
Charging Time	10 hrs
Antenna & Interface	
AIS Antenna	Standard SMA male interface
GPS Antenna	Built-in High Gain
AIS PILOT PLUG input	Micro USB(APP)
Power supply input	Micro USB(DC IN)
Temperature Range & Dimensions	
Operating Temperature	-20°C~+60°C
Storage Temperature	-30°C~+80°C
Dimensions	110mm*62mm*28mm

DIAGRAM:

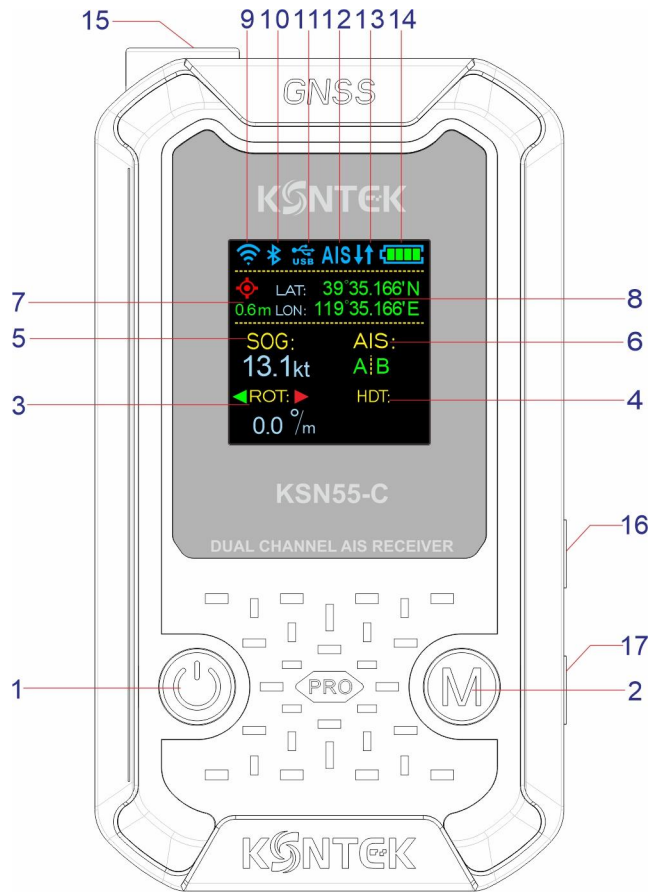


Figure 1.

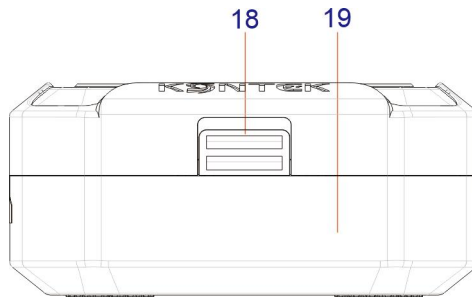


Figure 2.

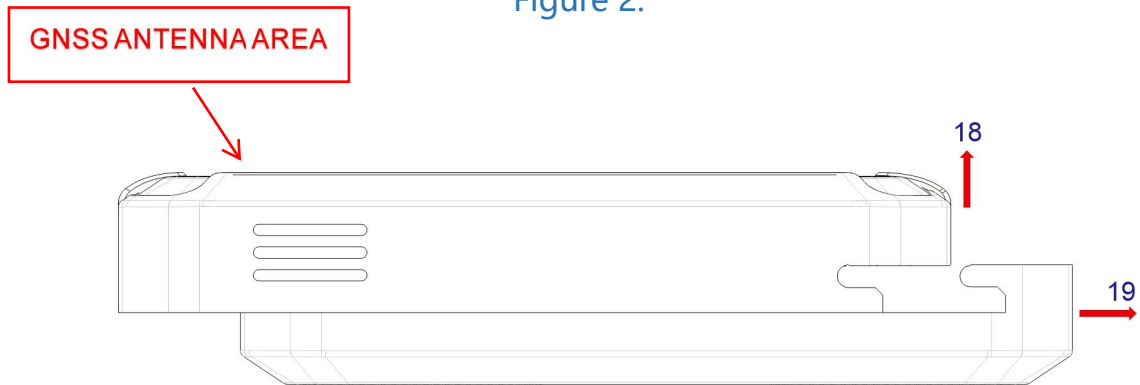










Figure 3.

DESCRIPTION:

1	Power on key,hold on 3 seconds for switch ON&OFF
2	“M” key,hold on 3 seconds to enter the unit’s MENU.
3	Independent ROT from unit
4	Independent Heading from unit (it’s not recommend to use)
5	SOG of independent GNSS(it’s not for ship’s AIS)
6	Independent AIS receiving status for dual channels
7	HDOP accuracy of independent GNSS after position fixed
8	Positions for independent GNSS after it fixed.
9	WiFi connection status icon,Connected “  ”,Disconnect “  ”, Not Display “OFF”
10	BT connection status icon,Connected “  ”,Disconnect “  ”, Not Display “OFF”
11	USB connection status icon,Connected “  ”,Disconnect “  ”, Not Display “OFF”
12	Independent AIS receiver working status
13	AIS PILOT PLUG data status, data incoming “  ”, No data “  ”
14	Battery level icon,battery level status can be posted to some of app like SEAiq
15	The AIS Antenna socket for independent AIS receiver,SMA male standard
16	APP input for ship’s AIS PILOT PLUG,magnetic 540 degrees connector
17	Power supply input,DC 5.0V 2A, magnetic 540 degrees connector
18	Battery locker
19	Removable Li-Poly Battery 7000mAh

HOW TO START:

1. Always place unit horizontal when using that ROT requested;
2. If using independent AIS receiver that “AIS antenna” should be fixed.
3. The “GNSS ANTENNA AREA” should be facing up to the clear sky in order to obtain good signals when using independent GNSS;
4. To replace new battery by release the Battery Locker “18” then slide Battery “19”

(Note: The spare battery must be full charged before long time saved)

CONNECTIONS:

- a. **Wi-Fi:** SSID name: **KSN55-C PRO**; Password: **12345678**
Protocol: **TCP**; Host IP: **192.168.2.1**; Port: **8888**
- b. **Bluetooth:** Bluetooth name: KSNTEK-BT(**Working for computer and Android,Not in iOS**)
- c. **USB:** Install USB driver for PC or Mac then find COM port on device manager

Note: For some of App on iOS already fixed connection settings, like in SEAiq just find the “KSNTEK KSN11-C ROT.....” in Standard WiFi Devices then Enable on it.

BASIC OPERATION:

SHIP AIS PILOT PLUG MODE:

Default output data on unit are: GNSS,ROT,AIS Receiver on NMEA sentence,user can make them OFF in unit MENU to let it worked with ship’s AIS Pilot Plug, it will repeat ship’s data after both OFF.

There is a quick function in KSN55-C PRO that double press M key to swap on APP MODE,in APP mode will set independent GNSS OFF,keep ROT together post with ship’s AIS PILOT PLUG data.

Ship’s AIS PILOT PLUG data will not displayed on unit’s screen,it will transfer directly to APP

Recommend setting:

SOG,COG,HEADING from ship and ROT from KSN55-C PRO

Note: Own AIS receiver will OFF automatic after AIS cable connected to ship,so it can at ON always.

INDEPENDENT AIS MODE:

This mode is for backup when ship navigations are not working.

The GPS,ROT,AIS,should be ON in unit MENU,Heading value must be initiated in the web page “192.168.2.1/ksntek.html’ CAL option.

Note: ROT CALIBRATION will requested if it opened whatever ship mode or own ,HDT not recommend to use for the moment.

ROT CALIBRATIONS:

The calibration of ROT on equipment is very important before use it. the value of ROT will be inaccurate if it not calibrated correctly.there are two ways to calibrate ROT as below:

1.HARD CALIBRATION:

Do not connect the AIS cable before power on.place unit horizontal position and keep the device relatively static.short press once Power and M key at same time then waiting 4 minutes until the processing done,please DO NOT move unit during the calibration.

2.Web CALIBRAION:

iPad or PC connect to unit via WiFi, open the IE browser or Safari, enter the address "192.168.2.1/ksntek.html" in the address bar (please type all the letters including the end "html" and lowercase letters, pay attention to the direction of the slash) and enter, the page will open as the following and click the CALIBRATE button to manually calibrate the device, then waiting 4 minutes until the processing done,please DO NOT move unit during the calibration.

CONTROL PANEL

ROT:	<input type="button" value="ENABLE"/>	<input type="button" value="CALIBRATE"/>
	<input type="button" value="DISABLE"/>	
HDT:	<input type="button" value="ENABLE"/>	<input type="button" value="DISABLE"/>
CAL:	<input type="text"/>	<input type="button" value="SEND"/>

(CAL VALUE FOR HDT INPUT BY CORRECT HEADING)

HDT: heading from KSN55-C PRO,it can be Enabled or Disabled in this page;

CAL: the heading in KSN55-C PRO need to input value for initial,input a value then tap on SEND,unit must be no movements after the value set.

UNIT MENU:

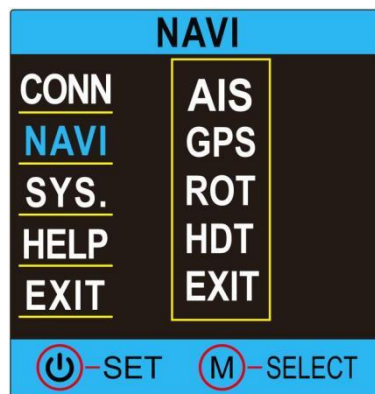
All functions on the device can be turned OFF / ON through the menu options. Press and holding M key for 3 seconds, it will enters the device operation menu. Use M key to chooses and Power key enter the sub menu and SET.

CONN:



To SET connections module ON/OFF in this MENU, Power key ENTER and SET,M key select.

NAVI:



In this menu can set own AIS, GPS, ROT, HDT to be ON/OFF,mostly use when KSN55-C working on Ship's AIS Pilot Plug.

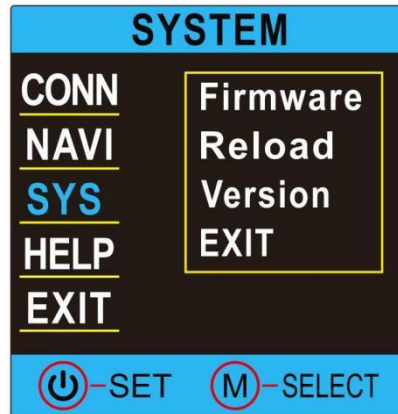
AIS: Own AIS receiver can ON/OFF automatically after connected AIS cable to ship's AIS pilot plug or manually in this menu.

GPS: Own GNSS receiver, it will post NMEA sentence together with ship's AIS after connected AIS cable if it ON, can set it OFF when use ship AIS pilot plug mode.

ROT: Own Rate of Turn sensor, it will post NMEA sentence together with ship's AIS after connected AIS cable if it ON, it can left with ON if ship AIS not provide ROT data.

HDT: Own Heading sensor, the factory default is OFF, recommend to leave it OFF when use ship AIS Pilot Plug mode.

SYS:



If some settings wrong or forget what have set that can be reloaded to the factory default by SYS-RELOAD. The factory default are: WiFi, Bluetooth ,USB,AIS,GPS,ROT with ON status.

If entering Firmware update just press and hold the Power key to exit then unit will OFF then power on again.

HELP:



This menu contains parameters of unit like Host IP address and WiFi network password, the Bluetooth pair key not requested anymore in this version.

Wi-Fi SETTINGS:

On the latest products from KSNTTEK that allow end users to customize on Wi-Fi settings like SSID NAME and Network Password...etc, this will avoid some unexpected connections due to the WiFi allows max 3 clients only.

Open Safari or IE Explorer type 192.168.2.1 in address bar then Enter

User Name: admin

Password: pilot

If there something wrong on settings that WiFi can be reloaded by factory default in
MENU—CONN—WiFi—Reload.