



# XN60 Series Touch Screen Multi-function Display

Quick Reference V1.2

## Version Record

ID	Version	Revised Date	Revised Content
1	V1.0	2018-08-27	First edition.
2	V1.1	2019-03-01	Add 4G function
3	V1.2	2019-08-29	Update interface definition
4			
5			
6			

Users can scan the QR codes to get detail User Operation Manual.



## **Instructions:**

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**Warning:** Please read through the cautions of the manual to understand the product's cautions and other more important information.

The equipment is not used for navigating directly.

When use the device, please refer to other available navigation sources, including the information from other navigation aids and actual sea conditions, such as: official chart, visual sightings, radar, tides, hydrology, weather and so on.

**Statements:** Other products and company names involved in this manual are only for identification. Those names may be registered trademarks owned by other company. Version information is displayed in the system only and will not be described in details in this manual. "XINUO" and "XINUO TECH" mentioned in this manual all refers to "Xinuo information technology (xiamen) corporation limited".

This manual is only for reference, the detail operations should depend on device. It applies to the following models:

XN60

**Notes:**

Before turn on this unit, please be sure to read the following precautions to avoid product failure caused by improper operation:

1. Firmly installation of the device is necessary to avoid damage caused by falling down.
2. Please do not use this product without original power adapters. Otherwise, the navigator may not work properly or the performance might be affected or even the equipment will be damaged because of the circuit designs.
3. Please do not disassemble the unit by any means or no warranty will be extended.
4. When using or cleaning, be sure to avoid any liquid or other objects falling into the unit as this might cause damage or short circuit.
5. Please do not place the unit and its accessories in a damp environment or under the direct sunlight. Keep the unit in the dry environment.
6. Power supply should be grounded to avoid static and lightning. If the device is not in use, please turn off the unit.
7. If the device cannot position for a long time, please check the following: whether the antenna is installed properly; the connection; any forms of interference around the antenna. Before starting of the unit, please make sure the antenna cable joints are intact; there is no short-circuit or open circuit; and follow the correct antenna installation procedure. During the start-up stage, please do not arbitrarily remove the antenna in order to avoid damages to the equipment.
8. When external temperature is too high, the unit may not function properly. Stop using the equipment until the temperature returns to normal and restart the equipment.
9. Avoid direct sunlight on the LCD screen. You can adjust the angle of the screen anytime to get the best visual effects.
10. When hardware failure occurs (e.g. power lines are burned, machine is damaged or foreign bodies fall into the equipment, etc.), please shut down the power and contact with the distributor immediately.
11. Virtually, all data sources might contain some inaccurate or incomplete data. The data is only for your reference and we cannot guarantee any accident, injury or proper damage. All legal responsibility and other obligation will not be taken by XINUO.

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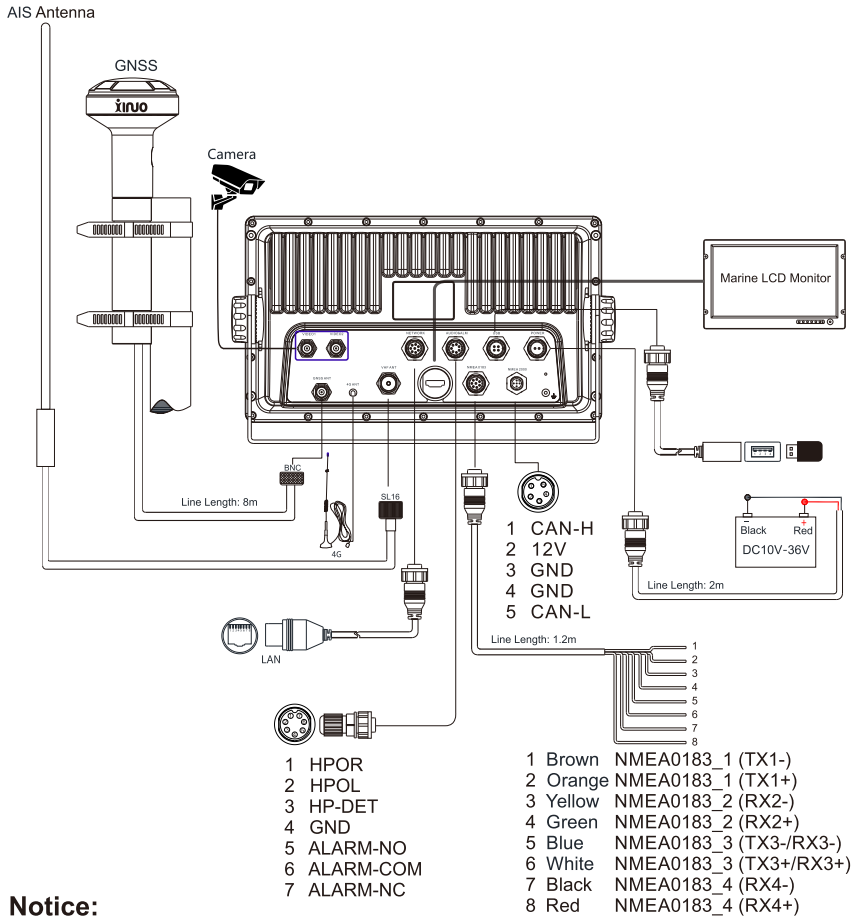
## 1. Product Introduction

XN60 series multi-function display is a flexible and smart navigation solution providing the operator with a convenient task-oriented and networking environment. The system combines chart plotter, AIS and navigation, it also provides service by cloud such as updated over the air and monitoring on shore, etc.

## 2. Standard Configuration

ID	Name of Item	Quantity
1	Display	1
2	Stand	1
3	Knob	2
4	LCD Hood	1
5	2m Power Cable	1
6	1.2m Data Cable	1
7	USB Connection Cable	1
8	LAN Connection Cable	1
9	8m GNSS Antenna	1
10	7pin Connector	1
11	4G Antenna	1
12	Dust Cap of NMEA2000 Interface	1
13	Dust Cap of HDMI Interface	1
14	Screw of 4.8×20	4
15	Product Quick Manual	1

### 3. Interface Definition



**Notice:**

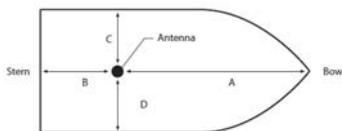
- [1] Default values of NMEA0183 output are RMC, GGA, VTG, GLL, ZDA, XTE and APB. They also can be set by “Settings-NMEA-Output”.
- [2] The NMEA0183 input can be analysis normally, if three input ports all input a same kinds of sentence, the analytic priority ranking should be RX2, RX3, RX4.
- [3] NMEA0183\_3(TX3/RX3) can be set as receive or transmit. It can be set by “Settings-Device Display-NMEA0183\_3 Configuration”, default value is AIS output.



## 4. Installation Instruction

### 4-1 Installation of GNSS antenna

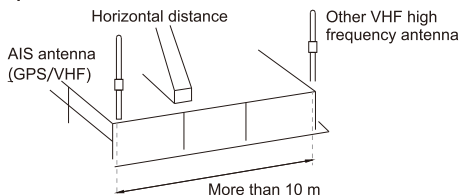
GNSS antenna should be without continuous obstacles in the level  $360^\circ$ , elevation  $5^\circ$ - $90^\circ$ . Apart from more than 3m from the s-band radar and INMARSAT system and other high power antenna beam. Measure A/B/C/D distance data to set up the ship's static parameter.



### 4-2 Installation of VHF antenna

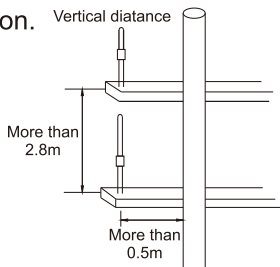
#### 4-2-1 Horizontal Installation

- [1] VHF antenna should be installed in the level  $360^\circ$  without any obstacles.
- [2] VHF antenna should be kept more than 2m away from conductor structure in horizontal position. It also should be kept more than 3m away from the transmitted beam of radar and high power source antenna.
- [3] VHF antenna should be kept more than 10m away from ship's other VHF in horizontal position, if it must be in a same horizontal plane.



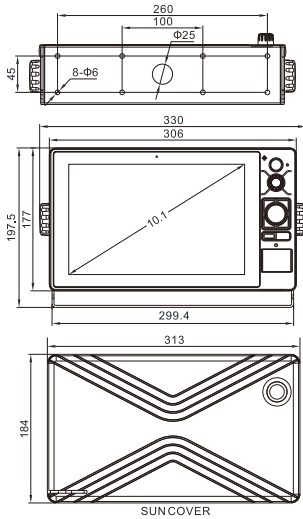
#### 4-2-2 Vertical Installation

VHF antenna must be kept more than 2m away from ship's other VHF antenna in vertical position.

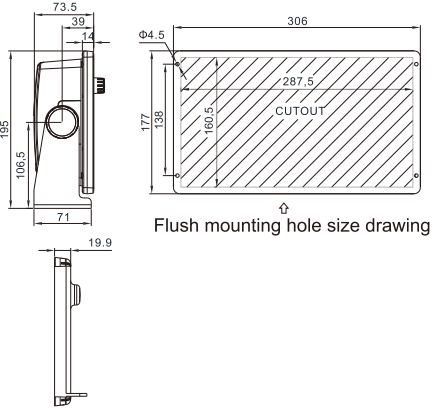


### 4-3 Equipment Installation

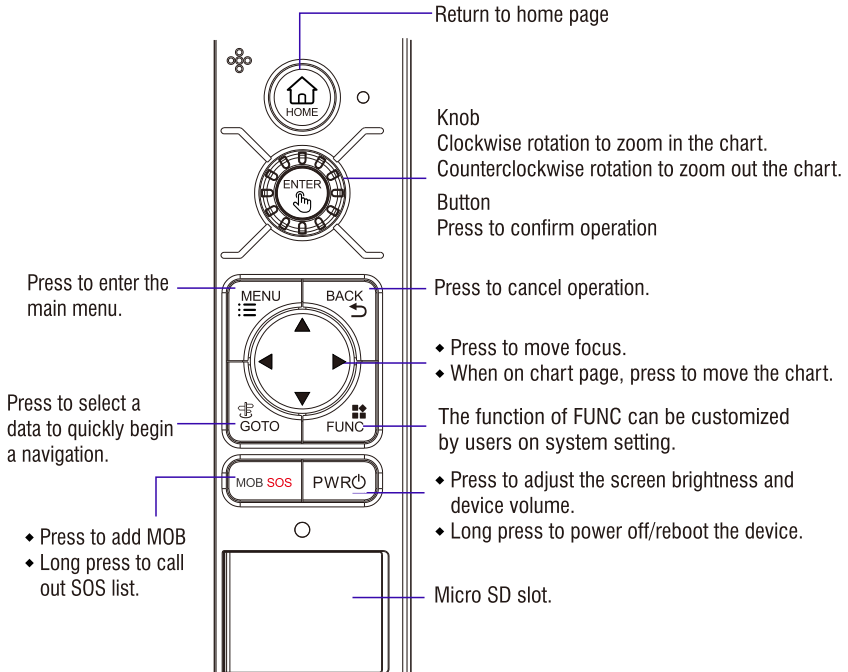
Counter Mounting [Unit:mm]



Flush Mounting [Unit:mm]



### 5. Key Definition



## **6. Operating Instruction**

### **6-1 Network Connection**

On the Home page, click “Settings” to go to setting page, click “Network” on the left of setting page to go to setting connection of Ethernet, Cellular mobile network, WIFI, Bluetooth, etc.

### **6-2 User Register/Login**

On the Home page, click “User” to go to user page.

#### **6-2-1 Register**

Click “Register Now” to go to register, users can input cell phone number, verification code and set password to register.

#### **6-2-2 Login**

There are two ways to log in, one is inputting cell phone number and password, the other is inputting cell phone number to get verification code and input verification code to login.

#### **6-2-3 Forget Password**

If forget password, users can input cell phone number to get verification code and input code to verify, password can be changed after verification.

### **6-3 Dual Chart System**

On the Home page, click “Chart” to go to chart page, swipe left the screen to call out main menu. On the first line of main menu, there are XINUO-MAP and C-MAP for selection and switch.

**Notice:** If select C-MAP

[1] Please make sure the C-MAP card is MAX format.

[2] Please make sure the C-MAP MAX card is inserted on the first card slot of the right side.

### **6-4 Track Operation**

#### **6-4-1 Track Record**

6-4-1-1 Continue to record on previous record

On the Chart page, click “Track Record” button to continue to record on previous record, click again to stop the recording.

#### 6-4-1-2 Add a new record

On the Chart page, long press “Track Record” button to add a new record, click again to stop the recording.

#### 6-4-1-3 Select a record to continue recording

**Method 1:** Click to select the data that want to continue to record on the chart and there will pop-up an operation selection box, click “Track Record” button on the operation selection box to continue recording.

**Method 2:** On the Home page, click “Track” to go to track list. On the track list, click “Track Record” on the operation bar of the data that want to continue to record to continue recording.

#### 6-4-2 Track Color Switch

**Method 1:** Click to select the data that want to change color on the chart and there will pop-up an operation selection box, click “Edit” button to go to edit box to edit the display style including symbol and color of the selected data.

**Method 2:** On the Home page, click “Track” to go to track list. On the track list, click the data that want to change color to go to edit page to edit the display style including symbol and color of the selected data.

**Notice:** The track color switch only work for the new creation data after switch.

#### 6-4-3 Track Deletion

**Method 1:** Click to select the data that want to delete on the chart and there will pop-up an operation selection box, click “Delete” button on the operation selection box to delete the track.

**Method 2:** On the Home page, click “Track” to go to track list. On the track list, swipe left the data that want to delete to call out delete button to select delete the entire data or delete to data that was with specified color.

#### 6-4-4 Track Batch Edit, Deletion

On the Home page, click “Track” to go to track list. On the track list, long press the track data to go to batch operation page. Multiple/All data can be selected for batch operations of Lock, Favorite, Display, Delete, Delete by color, etc.

## 6-5 Navigation Data Operation

Navigation data includes waypoint and route.

### 6-5-1 Navigation Data Creation

**Method 1:** Long press to confirm the starting point of navigation data on the chart and there will pop-up an operation selection box, click “Add” button on the operation selection box to confirm the adding.

[1] If it is to create a waypoint, go on to click “Confirm” button on the operation selection box and select the data type as waypoint to finish the waypoint creation, click “Cancel” button to give up the waypoint creation.

[2] If it is to create a route, go on to click on the chart to add nodes. After finish nodes adding, click “delete” button on the operation selection box to delete the latest adding node, click “Confirm” button and select the data type as route to finish route creation, click “Cancel” button to give up the route creation.

**Method 2:** On the Home page, click “Navigation Data” button to go to navigation data list. On the navigation data list, click “Add” button and select add a waypoint or a route to go to data adding page to input LAT/LON data.

### 6-5-2 Navigation Data Deletion

**Method 1:** Click to select the data that want to delete on the chart and there will pop-up an operation selection box, click “Delete” button on the operation selection box to delete the data.

**Method 2:** On the Home page, click “Navigation Data” to go to navigation data list. On the navigation data list, swipe left the data that want to delete to call out delete button, click the “Delete” button to delete the data.

### 6-5-3 Navigation Data Batch Edit, Deletion

On the Home page, click “Navigation Data” to go to navigation data list. On the navigation data list, long press the navigation data to go to batch

operation page. Multiple/All data can be selected for batch operations of Lock, Favorite, Display, Delete, etc.

## 6-6 Navigation

Navigation data and MOB can be used to navigation.

### 6-6-1 Call Navigation Data/MOB to navigation

**Method 1:** Click to select the data that want to navigation on the chart and there will pop-up an operation selection box, click “NAVI” button on the operation selection box to start navigation.

**Method 2:** On the Home page, click “Navigation Data”/ “MOB” to go to navigation data/MOB list. On the navigation data/MOB list, click “NAVI” on the operation bar of the data that want to navigation to start navigating.

**Method 3:** Press the physical button “GOTO”/click the “GO TO” button on the Home page to go to the navigation data list, click “NAVI” on the operation bar of the data that want to navigation to start navigating.

### 6-6-2 Call History Navigation Data

On the Home page, click “History Navigation” to go to history navigation data list. On the history navigation data list, click “NAVI” on the operation bar of the data that want to navigation to start navigating.

## 6-7 Plot Data Operation

Plot data includes point, line and polygon.

### 6-7-1 Plot Data Creation

**Method 1:** Long press to confirm the starting point of plot data on the chart and there will pop-up an operation selection box, click “Add” button on the operation selection box to confirm the adding.

[1] If it is to create a point, go on to click “Confirm” button on the operation selection box and select the data type as point to finish the point creation, click “Cancel” button to give up the point creation.

[2] If it is to create a line/polygon, go on to click on the chart to add

nodes. After finish nodes adding, click “delete” button on the operation selection box to delete the latest adding node, click “Confirm” button and select the data type as line/polygon to finish data creation, click “Cancel” button to give up the data creation.

**Method 2:** On the Home page, click “Plot Data” button to go to plot data list. On the plot data list, click “Add” button and select add a point, line or a polygon to go to data adding page to input LAT/LON data.

### **6-7-2 Plot Data Deletion**

**Method 1:** Click to select the data that want to delete on the chart and there will pop-up an operation selection box, click “Delete” button on the operation selection box to delete the data.

**Method 2:** On the Home page, click “Plot Data” to go to plot data list. On the plot data list, swipe left the data that want to delete to call out delete button, click the “Delete” button to delete the data.

### **6-7-3 Plot Data Batch Edit, Deletion**

On the Home page, click “Plot Data” to go to plot data list. On the plot data list, long press the plot data to go to batch operation page. Multiple/All data can be selected for batch operations of Lock, Favorite, Display, Delete, etc.

## **6-8 AIS Operation**

### **6-8-1 AIS List**

On the Home page, click “AIS List” to go to AIS list.

- [1] On the AIS list, click the “StateID” button of the AIS targets to do the operations of favorite, join in/remove to group.
- [2] On the AIS list, click “NAVI” on the operation bar of the AIS target that want to be the destination of navigation to starting navigating, click “SMS” to quickly go to message editing page to edit and send a message to the AIS target, click “View” to quickly go to chart page to view the AIS target.
- [3] Long press the AIS target data on the AIS list to go to batch operation page. Multiple/All AIS targets can be selected for batch operations of Favorite, SMS, Join in Group, etc.

## **6-8-2 AIS Radar**

On the Home page, click “AIS Radar” to go to AIS radar page.

### **6-8-2-1 Range Circle**

On the AIS Rader page, there are four range circles. Users can click “+” or “-” to adjust the field of view. There are 2nm, 5nm, 10nm, 20nm, 30nm, 40nm, and 50nm for adjustment.

### **6-8-2-2 Information Display**

- [1] Around the range circles, there displays own-ship’s SOG, COG, HDG, LAT/LON and the targets in view, filed of view, etc.
- [2] Selecting an AIS target, the AIS target’s static parameter and navigational information are displayed on the right side. Users also can do operation of navigation, favorite, add to group and send message for the selected AIS targets.

## **6-8-3 Look over Static Parameter**

On the AIS List, swipe left the screen to call out main menu. On the main menu, click “Static Parameter” button to go to static parameter page to look over the MMSI, Name, Call Sign, Type, A/B/C/D of own ship.

## **6-8-4 NAVI Parameter Setting**

On the AIS List, swipe left the screen to call out main menu. On the main menu, click “NAVI Parameter” button to go to NAVI parameter setting page to set the Draft, Crew Number, Navigational Status, Destination, ETA of own ship.

## **6-8-5 Group Management**

On the AIS List, swipe left the screen to call out main menu. On the main menu, click “Group Management” button to go to group management page.



- [1] Click “Add Group” button on the left side of group management page to go to add a new group and set the group’s name, group member display symbol and group alarm. Click “Add” button on the right top of group management page to add group members, click “Search” to input MMSI/Name to search the group member list, click “Edit” to edit the properties of the group, click “SMS” to quickly send a message to the group members.
- [2] Swipe left the group name button to call out delete button, click the “Delete” button to delete the group.

### **6-8-6 Safety Information**

On the AIS List, swipe left the screen to call out main menu. On the main menu, click “Safety Information” button to go to safety information page. Click the safety information content button, there will pop-up a confirmation box, click “Confirm” to confirm to send the safety information, click “Cancel” to give up the safety information sending.

### **6-8-7 SMS**

On the AIS List, swipe left the screen to call out main menu. On the main menu, click “SMS” button to go to SMS page. The SMS page includes message list and contact list.

### **6-9 Volume/Brightness Adjustment**

**Method 1:** Press the physical button “Power” to call out volume/brightness setting box to set the volume/brightness.

**Notice:** long press the physical button “Power” will power off the equipment.

**Method 2:** On the Home page, click “Settings” to go to setting page, click “Device Display” on the left of setting page to go to setting language, units, device volume, screen brightness, etc.

## 7. Update Instruction

On the Home page, click “Settings” to go to setting page, click “Version Update” on the left of setting page to go to view the version information of operation system, chart, weather, calendar, main application, etc.

### 7-1 Update Online

When the network is available, if there is a new version, there will be a red marker before the version number. Click the red marker to pop-up prompt box to show update contents and click “Confirm” on the prompt to starting to download and install new version automatically, click “Cancel” to give up the update.

**Notice:** The chart can be updated by SD card only now.

### 7-2 SD update

#### 7-2-1 Format the SD card to FAT32 format

#### 7-2-2 Update File Download

Click <http://www.xinuo.com/downloads/MFD/XN6010B.rar> to download update file.

**Notice:**

The download address may be changed, please visit [www.xinuo.com](http://www.xinuo.com) to get the latest download address.

#### 7-2-3 Unzip File

Unzip the update file to SD card and put the SD card into the card slot of equipment.

#### 7-2-4 Update

After putting the SD card into the card slot of equipment, the SD Card Update menu will appear automatically on the version information page. Click the “SD Card Update menu button to start updating.

**Notice:**

[1] The SD Card Update menu appears only when the SD card is already put into the card slot of equipment.

[2] If there are no new versions, the SD Card Update menu will not appear.

## 8. Hardware Configuration

<b>Equipment Parameters</b>		
Operation System	Android 5.1 with OpenGL ES 3.0 & OpenCL 1.1	
CPU	Cortex-A17 Quad core	
CPU Speed	1.8GHz 32 Bit	
RAM	2GB DDR3 1333MHz	
Flash Memory	16GB Flash Memory	
Video Engine	Mali-T764	
Keyboard	1 Knob Encoder and 11 Function Keys	
Touch Panel	Capacitive Multi-touch Screen	
Size	10.1 Inch	
Brightness	600 cd/m <sup>2</sup> (Max)	
Viewing Angle	Wide View 85°	
Resolution	1280 x 800	
Power Voltage	DC 10V-36V	
Power Consumption	14W or less (24 VDC)	
Audio	1W	
Micro SD Card Slot	Support Two 128G High Speed Micro-SD Card	
<b>GNSS</b>		
GNSS Receiver	32 channels	
Receive Frequency	L1,1575.42MHz; B1,1561.098MHz	
Accuracy	GPS&BDS	2.5m (CEP50% open sky)
	GPS	3m (CEP50% open sky)
	BDS	5m (CEP50% open sky)
Speed Accuracy	0.1m/s (50%@10m/s)	
Time to First Fix	Cold Start: <32s 、 Hot Start: <1s	
Coordinate Systems	WGS-84 (and others)	

Bluetooth	BT4.0
WiFi	802.11 b/g/n
4G Module	LTE/WCDMA/GSM Internal/External Antenna Switch
Input	2 NMEA0183 Input, 1 NMEA0183 can be set as Input or Output. All are with Independent Baud rate
Output	1 NMEA 0183 Output, 1 NMEA0183 can be set as Input or Output. 1 Audio Output; 1 Alarm Output
Lan Net work	1000Mbps
Operating Temperature	-15°C ~ +55°C
Standard	IEC-60945 , IEC-62287-1 2010 , IEC-61108-1
<b>AIS Class B</b>	
Frequency	156.025 ~ 162.025MHz
Bandwidth	25KHz
Modulation	GMSK/FM
Data Rate	9600bps
Number of AIS transmitter	1
Number of AIS Receiver	2 channels: Channel A CH87B(161.975MHz) Channel B CH88B(162.025MHz)
Transmitting Power	2W
Rx Sensitivity	< -107 dBm @ 20% PER



YS01EM1001



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