USER MANUAL OF GPS BUOY (LSB)

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❶ Default Display Button(復原顯示按鈕)

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❹ Show Buoy position(顯示浮標位置)

❺ Clear Screen （清除畫面，刪除全部浮標記錄）

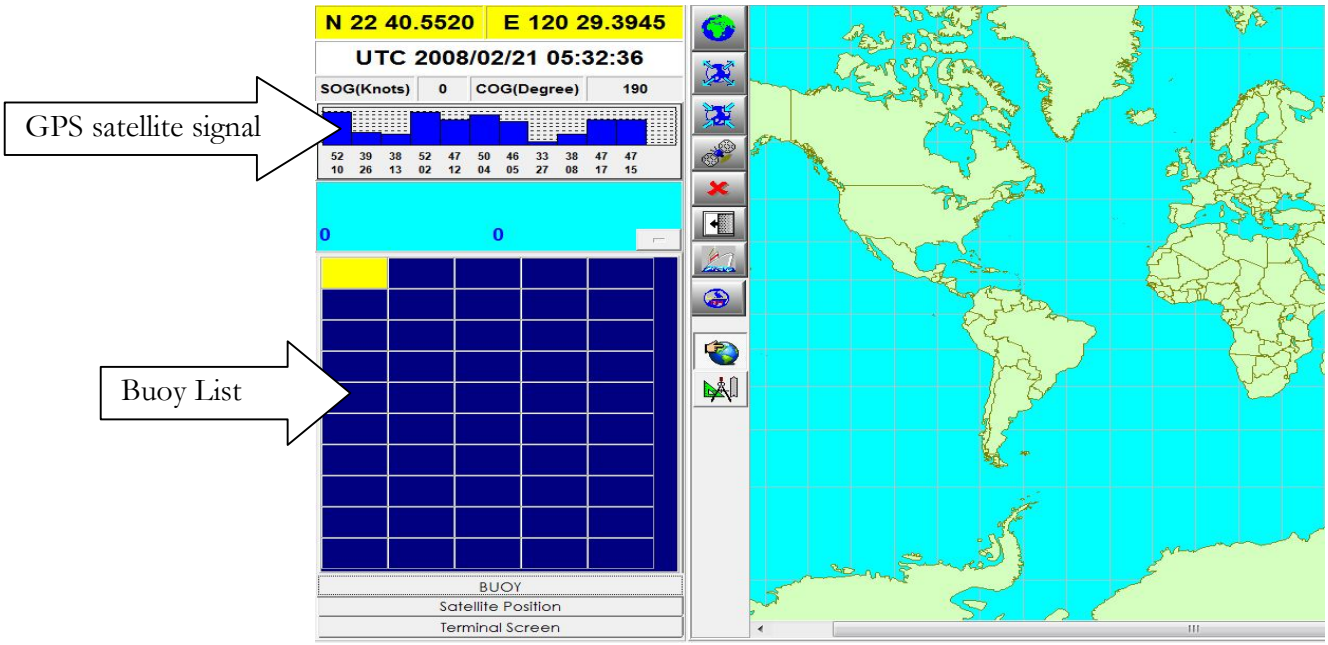
❻ Information Panel(Detail in Page2) （相關資訊顯示面板參考第二頁）

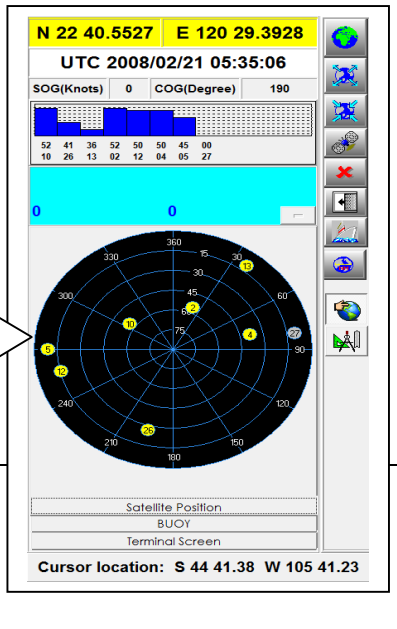
❼ Display the historical record of the sailing track 顯示船歷史航跡

❽ Display the compass (the locked ship position shows on the upper right in map) 顯示航向羅盤面板 （鎖定船位顯示於地圖右上角）

❾ 測量線已刪除

❿ Distance measuring tool (moving the cursor to select the position info)測量距離工具(滑鼠游標移動選取位置距離資訊)

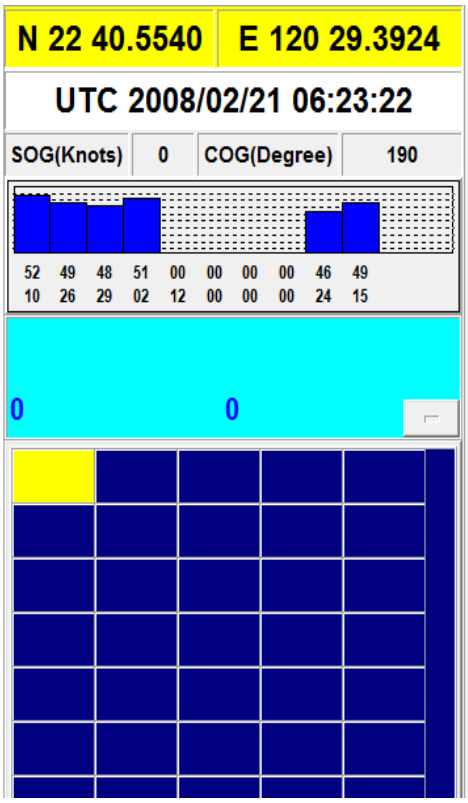




GPS satellite

GPS satellite position:
Using for monitor the condition of GPS satellite positioning

INFORMATION DISPLAY PANEL



Ship GPS position (Latitude/Longitude)
(船位經緯度顯示)

UTC Time (GMT 標準時間)

SHIP SOG/COG (SPEED/COURSE) (船航向航速)

GPS 衛星強度顯示(GPS Receive intensity demonstration)

BUOY INFORMATION: Name,Time,GPS(LAT/LON), DISTANCE/COURSE WITH SHIP)
浮標資訊顯示 (名稱,接收時間,離船距離,方位)

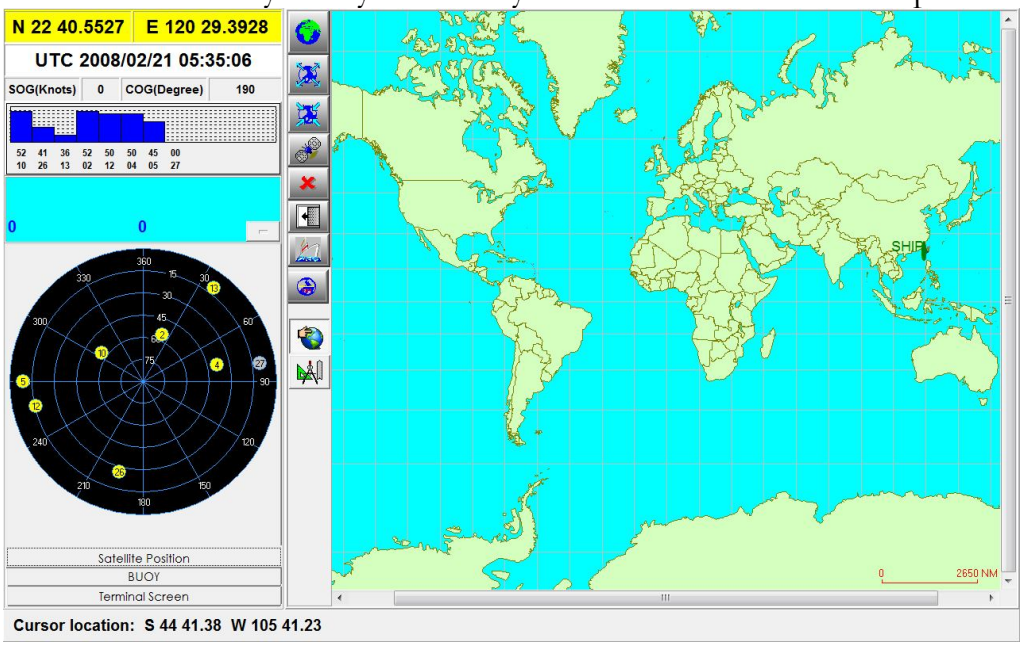
INDIVIDULE BUOY INFORMATION
(個別浮標資訊,需點選)

TERMINAL SCREEN(終端顯示)
Satellite positions 衛星位置顯示

⊙ Mouse Right Click in Map(滑鼠右鍵按紐功能)

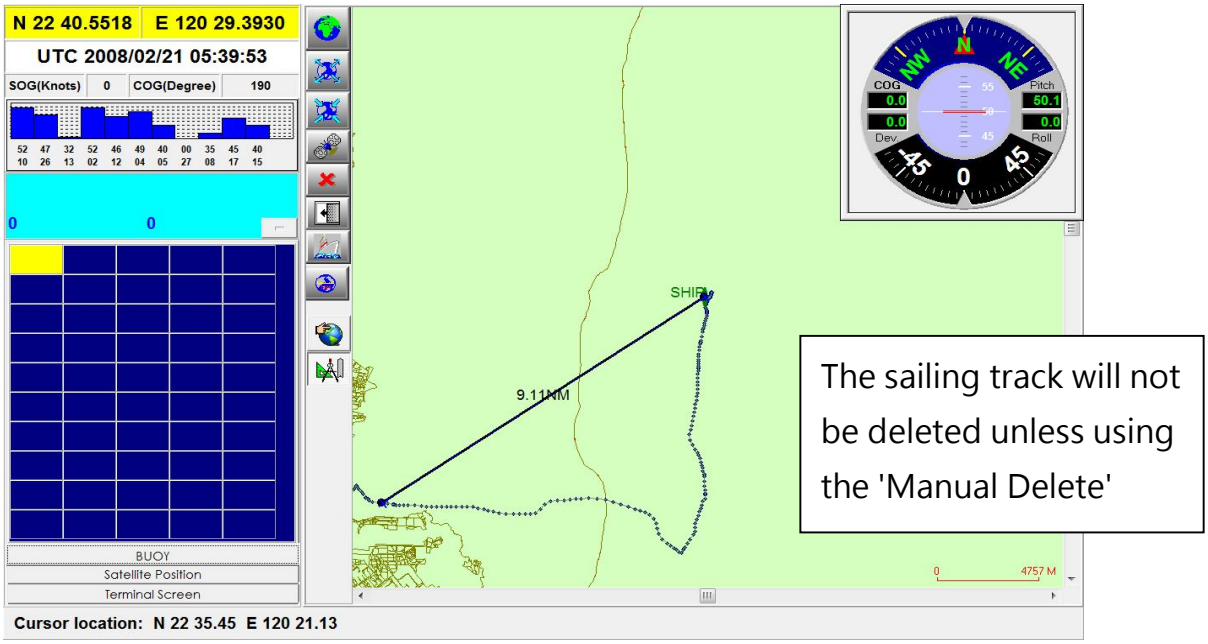
- ZOOM (放大地圖)
- Delete (隱藏選取的浮標)
- DELETE LINE 刪除距離量測線

The tracking record of the ship position
The ship position will be recorded by the system every 10 Sec and showed on map.



The timing to record the ship position:
1. When the speed is over 0
2. When GPS satellite positioning

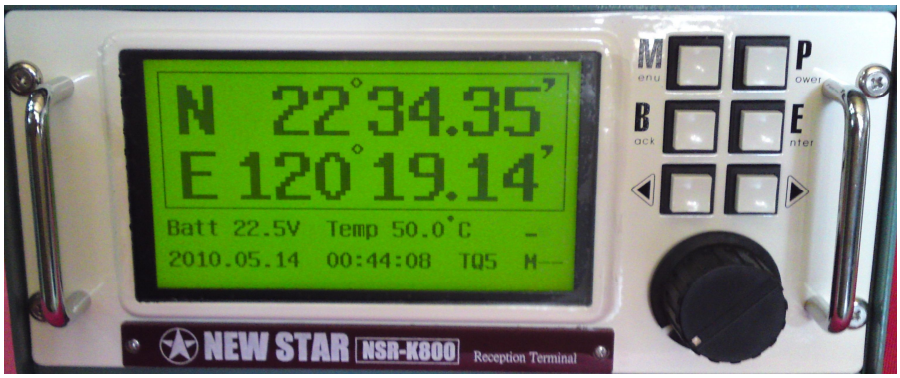
Click the Manual Delete bottom  during sailing, the ship position will be locked in the central of monitor and ask if you want to delete the historical record of the ship position. The record will be deleted after confirming.



INSTRUCTIONS ON HOW TO USE AND HOW TO INSTALL NSR-K800 RECEPTI0N TERMINAL

1. Turn 'On' or 'Off'

Press bottom [P] for 3~5 seconds.



2. Switch the Screen Monitor

Press [M] and it can be switched between two different functions which are (A) Longitude and Latitude & (B) Choice of receiving frequency

3. Receiving Frequency & Channel Input

1.) Press [M] to the screen of receiving frequency model

2.) Turn  control knob to the frequency you need (Memory: 01~99)

3.) Press [E] , there will be a cursor shows under the frequency No , using ◄► to adjust the position, and using  the control knob to adjust No. 0~9, finally press [E] as 'Enter', and it will show the input frequency and channel when the cursor disappears.
EX: if receiving Frequency is 2835 KHZ, Channel (Buoy NO.) is No. 5

(1) Press [M] to the frequency screen and adjust  control knob to the memory:01-05

(2) Press [E] then shows the cursor

a. Adjust ◄► to the thousands place and adjust the control knob to No.2
Adjust ◄► to the hundreds place and adjust the control knob to No.8
Adjust ◄► to the 10 digits place and adjust the control knob to No.3
Adjust ◄► to the digit place and adjust the control knob to No.5

b. Press [E] again then erase the cursor and complete the process

4. Volume Control

Press [P] again and the screen will show [VOL 0]

Adjust  control knob 0~9 to control the volume. "0 "means OFF and "1" means the smallest volume and "9" means the biggest volume, press [P] again to back to the screen of Longitude and Latitude or after 10 seconds, it will be automatically returned.

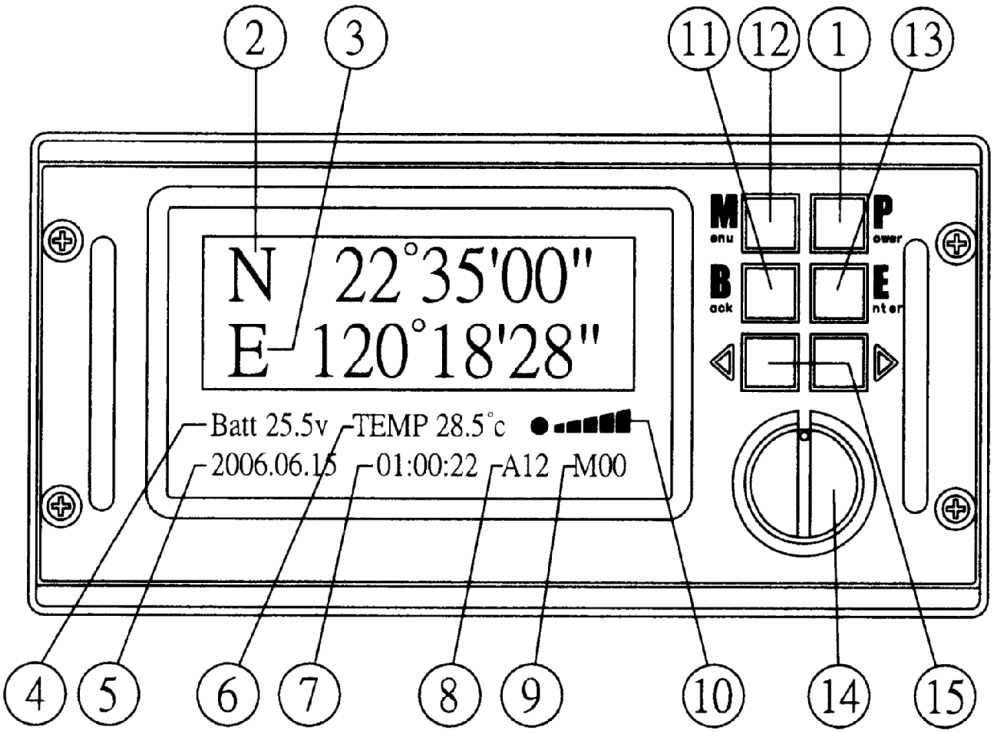
5. Memory

After the GPS buoy report complete, press [E] once and the screen shows [Recording] , and then it can be recorded into M 00-M 99 automatically.

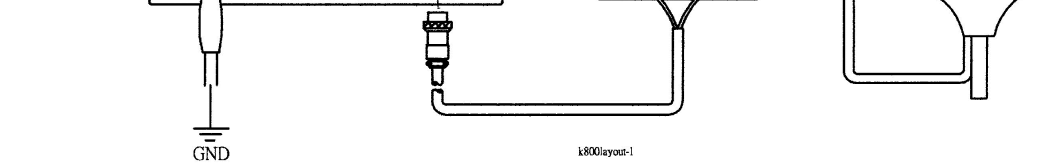
6. Delete the memory

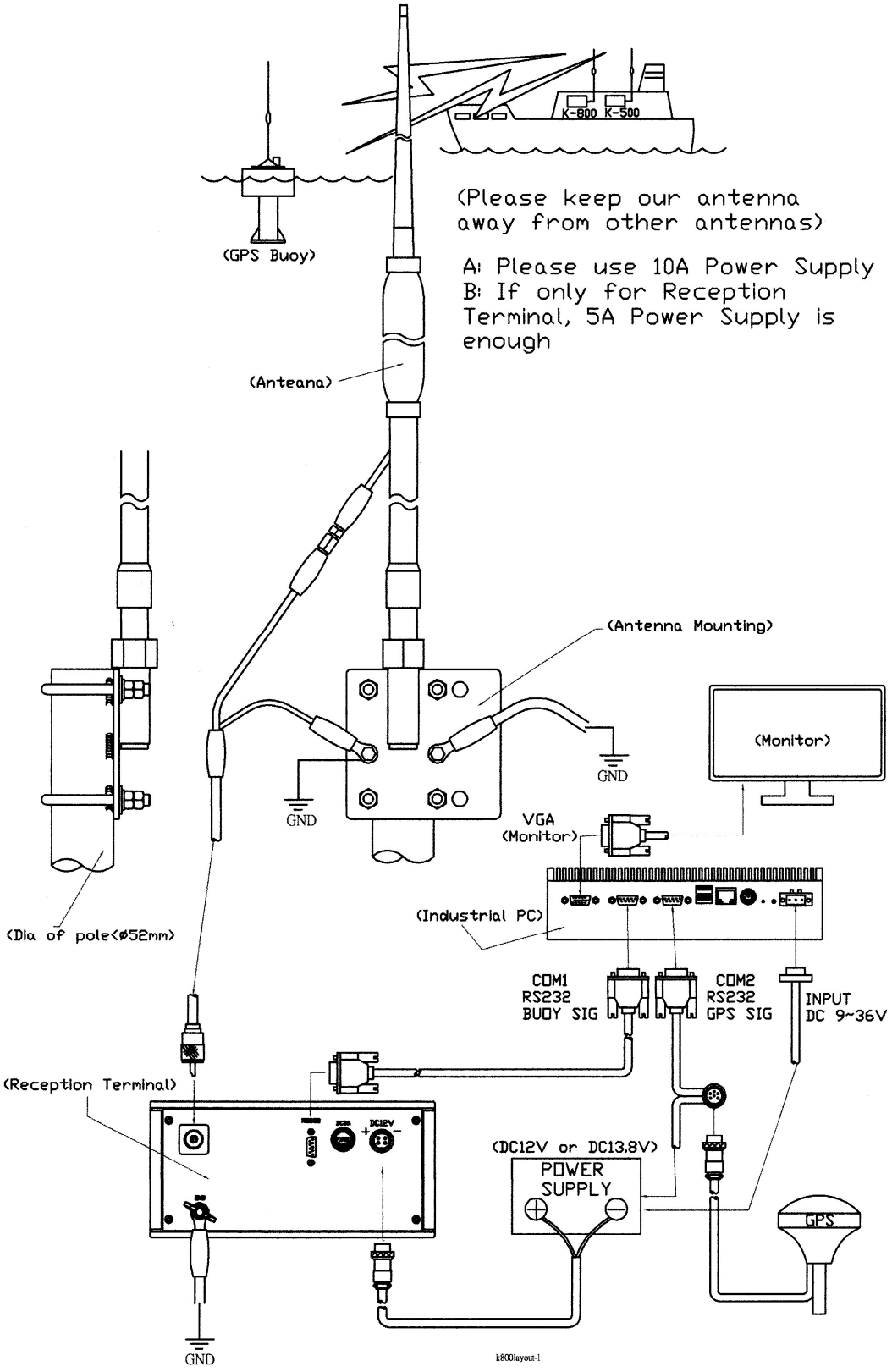
Press ◄► at the same time for 5~10 seconds, the screen will show [All Memory Clear]

NSR-K800 PANEL INSTRUCTIONS



1. 電源開關 Power On/Off (Switch)
2. 緯度 Latitude
3. 經度 Longitude
4. G.P.S.電浮標電壓 Remaining Battery Voltage
5. 日期 Date
6. 水溫 Water Temperature
7. G.M.T.時間 G.M.T Time
8. G.P.S. 電浮標編號 G.P.S Buoy Number
9. 記憶 00~99 組 Memory Group:00~99
10. 信號狀況 Signal Light
11. 跳出鍵 Back
12. 資料、選擇、儲存 Menu: For Data Searching And Saving
13. A.音量調整，B.確認鍵 Enter:
    A. Volume Adjustment ， B. Data Confirmation
14. 選擇鍵 Selection Turning Knob
15. 儲存資料全部消除 Clear


GND
k800layout-1


K-800 K-500
(GPS Buoy)
(Please keep our antenna away from other antennas)
A: Please use 10A Power Supply
B: If only for Reception Terminal, 5A Power Supply is enough
(Anteana)
(Antenna Mounting)
(Monitor)
GND
GND
VGA
(Monitor)
(Industrial PC)
(Dia of pole<ø52mm)
COM1
RS232
BUOY SIG
COM2
RS232
GPS SIG
INPUT
DC 9~36V
(Reception Terminal)
(DC12V or DC13.8V)
POWER
SUPPLY
GPS
GND
k800layout-1

SIGNAL GENERATOR-TRANSMITTER

(Selective Calling System)

MODEL: NSC-K500

CHAPTER 1. GENERAL DESCRIPTION

1. Model NSC-K500 Signal Generator-Transmitter is an apparatus for making a selective call of the selective calling signal detection unit installed at the SELCALL buoy (radio buoy with selective calling system) station, ship station or coast station.

2. The unit is installed 8 bit microcomputer which controls each part. And it is able to store the 99 selective calling signals into the memory.

3. The unit is composed of 4 figures which are selectable with 10 keys on the front panel, and emits tone signals of 4 frequencies corresponding to these figures in order.

4. When calling out a SELCALL buoy station, the unit emits tone signals corresponding to the 4 figures once. When calling out a ship station or coast station, the unit emits tone signals corresponding to the 4 figures twice repeatedly.

5. The tone signal output, as the modulated signal of the SSB, DSB telephone transmitter (H3E, A3E) or telegraph transmitter (A2A) of the ship station or coast station, is connected to the input circuit of its mike circuit or modulator, thereby generating a selective calling signal by the use of buoy calling frequency or communication frequency

CHAPTER 2. SPECIFICATIONS

2-1 Construction

(1) The unit is composed of the main chassis part, mainboard, front panel, rear panel and the power supply.

(2) Mainbord is composed of the 8 bit microcomputer, memory, synthesizer, and the in-out put circuit.

(3) All kinds switches are located on the front panel which are POWER switch, 10 key push button, remote change-over switch, emission times change-over switch, transmitter change-over switch, modulation level adjustment, test switch, mike connector, fuse holder, digital indicator, and LED luminous indicator. Write switch in to the memory is located inside of the front panel.

(4) Input power terminal for AC 100V, DC24V.
Transmitter, connector for remote control and earth terminal, are located rear panel.

2-2 Dimensions and weight

width(mm)	Height(mm)	Depth(mm)	Weight(Kg)	NOTE
270	125	290	5.5	

2-3 Configuration

The unit is composed of the following:

(1) Model NSC-K500 Signal Generator-Transmitter. 1 set

(2) Exclusive antenna (Option). 1 set

(1) Overall Height 4.45m

(2) Type Self-standing

(3) Antenna matching box With middle loading coil

(4) Cable 5D2V

2-4 Selective calling signals

(1) Code number and frequency

Code No.	1	2	3	4	5	6	7	8	9	0
Frequency Hz	502.5	532.5	562.5	592.5	622.5	652.5	682.5	712.5	742.5	772.5

Code No.	Repeat of figures(R)
Frequency	802.5 Hz

(2) Oscillation frequency tolerance ±1 Hz or less

(3) Call signal configuration 4-frequency tone series transmission system

(4) Call signal time

a. Transmitter relay delay compensation time 0.05 sec. to 0.1 sec. or less

b. Tone signal duration

c. Tone signal interval 0.2 sec. ± 0.03 sec. or less

(5) Number of calls and time 0.01 sec. or less

a. Calling out the SELCALL buoy station 1 call Approx. 0.9 sec.

(6) Call signal output

a. Output wattage and voltage

High + 6 dBm
Low -20 dBm

Where, 1 mW= 0 dBm with a load of 60 ohm connected to the signal output terminal.

b. 4-frequency call signal level ±1 dB or less

c. Call signal distortion factor 5% or less

(7) Call operation

When the CALL Push-button switch on the front panel is pushed once, a call signal is automatically emitted. The CALL ON LED lights when the call signal is being emitted, indicating that calling is under way.

(8) Power supply

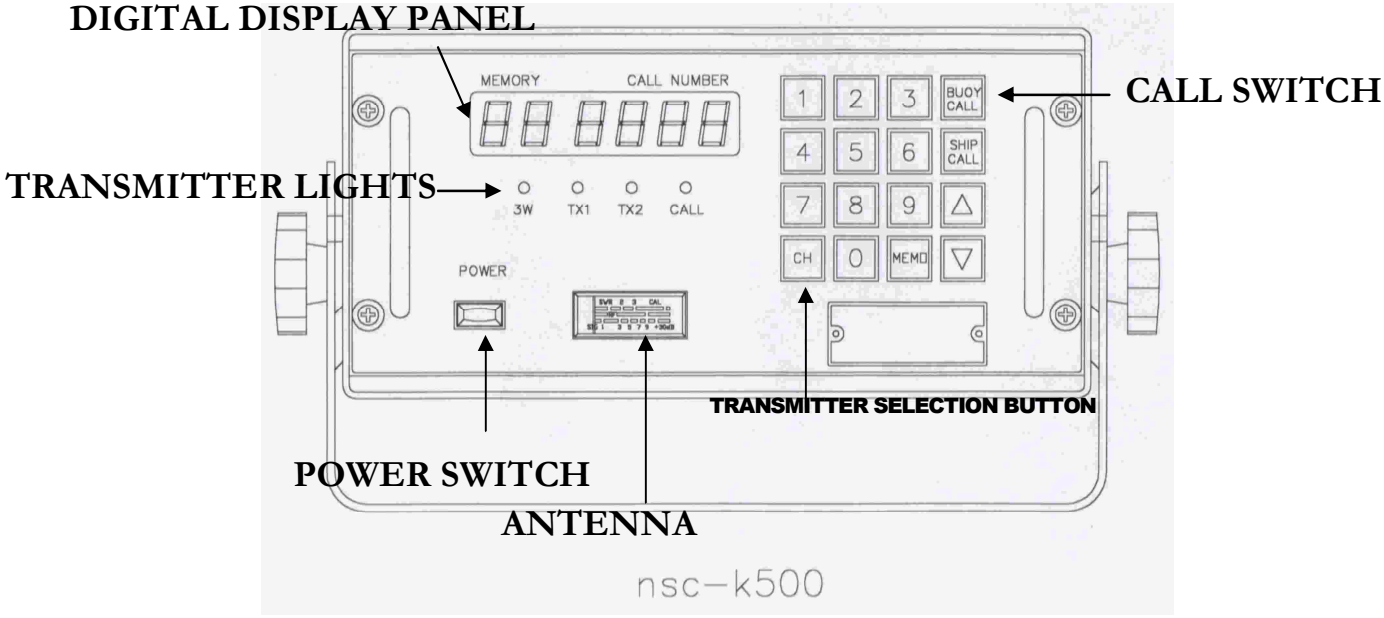
AC 100V(50/60Hz) or DC 24V

a. Alternating current (AC)	100V±10%	0.09A Approx.	10VA
	During preheating	HI 0 .45A Approx.	50VA
	During calling	LO 0.40A Approx.	44VA
b. Direct current	24V±10%	0.12A Approx.	3W
	During preheating	HI 1.4A Approx.	33W
	During calling	LO 1.08A Approx.	24W

Chapter 3. Performance

(1) Type of emission	A2B
(2) Antenna output power	(1) 3W (2) 7W
(3) Carrier Frequency	2331.5kHz ($\pm 100 \times 10^{-6}$)
(4) Transmission system	Oscillation
(5) Modulation system	Collector Modulation
(6) Preheating Time	Approx. 3 seconds
(7) Power supply	
7-1. Alternating current (AC)	100V (50/60Hz) ± 10% or less
During preheating	Approx. 7.7 VA——7W
During calling	Approx. 47.3VA——3W
7-2. Direct current (DC)	24V ± 10% or less
During preheating	Approx. 3.0W——7W
	Approx. 26W ——3W

CHAPTER 4. OPERATION



1. Turn On

   Press the power switch to ON. NSC-K500 will be self-testing and the digital display panel will indicate 88 8888. If it's normal the digital display panel will indicate 01 0000.

2. Select the Transmitter

   Normally the 3W instruction light illuminates when you turn on the NSC-K500. Press CH button once then it will jump to TX-1. That means the calling signal will be sent to TXI transmitter. Use the same method of TX2.

3.Temporary Enter Code

   For example, the Call Number(code) of the radio buoy is 1688. Press 1688, it will show 01 1688 on digital display panel. Then press BUOY CALL at this time, the yellow MEMORY Number will disappear.

4.Set up Memory and Call Number

   Please press △ or ▽ to the Memory No and enter the Call No.(code) of the radio buoy, than press the MEMO button once. At this time, the Memory and Call Number will flash. Press the MEMO button one more times, the Memory and Call Number will stop flashing.

5.Indication of Transmission

   After pressing the BUOY CALL button, the Call red lamp will flash. The Calling Signal is being sent at this time. After transmitting, the Call red light will extinguish and Antenna Current will go back to zero.

6.How to find the Sel-Call Buoy

   Before pressing Buoy Call button, please set the direction finder at the same frequency of the radio buoy. Than press the Buoy Call button to transmit the calling signal to the radio buoy. At the same time, the direction finder will receive the responded signal and will know the Sel-Call Buoy's direction.

Chapter 5. INSTALLATION AND ADJUSTMENT

5-1 Installation

(1) The antenna should be situated at least 100cm form other equipments, in order to avoid interference from other equipments.

(2) Grounding

A. Grounding is important and hence, good grounding is required to hull for steel ship with shortest dedicated grounding line.

B. In case of non-metallic ship, FRP or wood, please use a 30mm wide and 0.5mm thick copper belt and provide a copper plate, 300mm×450mm or larger at the bottom for grounding.

(3) The diameter of the steel stick should be 4~5mm, the length should be around 150mm.

(4) When you install the matching box, please select a suitable altitude in order to make adjustment.

(5) Please use the 5D2V cable or RG213. (Or same class cable)

(6) To avoid damage of transmitter, please do not turn on the power before install antenna.

(7) When you turn off the power, please do not turn on the power again immediately.

5-2 Adjustment

In spite of the adjustment of NSC-K500 has been done in our factory, please adjust again while you install the unit.

Step 1: Turn off the power, open the antenna matching box.

Step 2: Taken off 4 screws on the panel. (Figure-1)

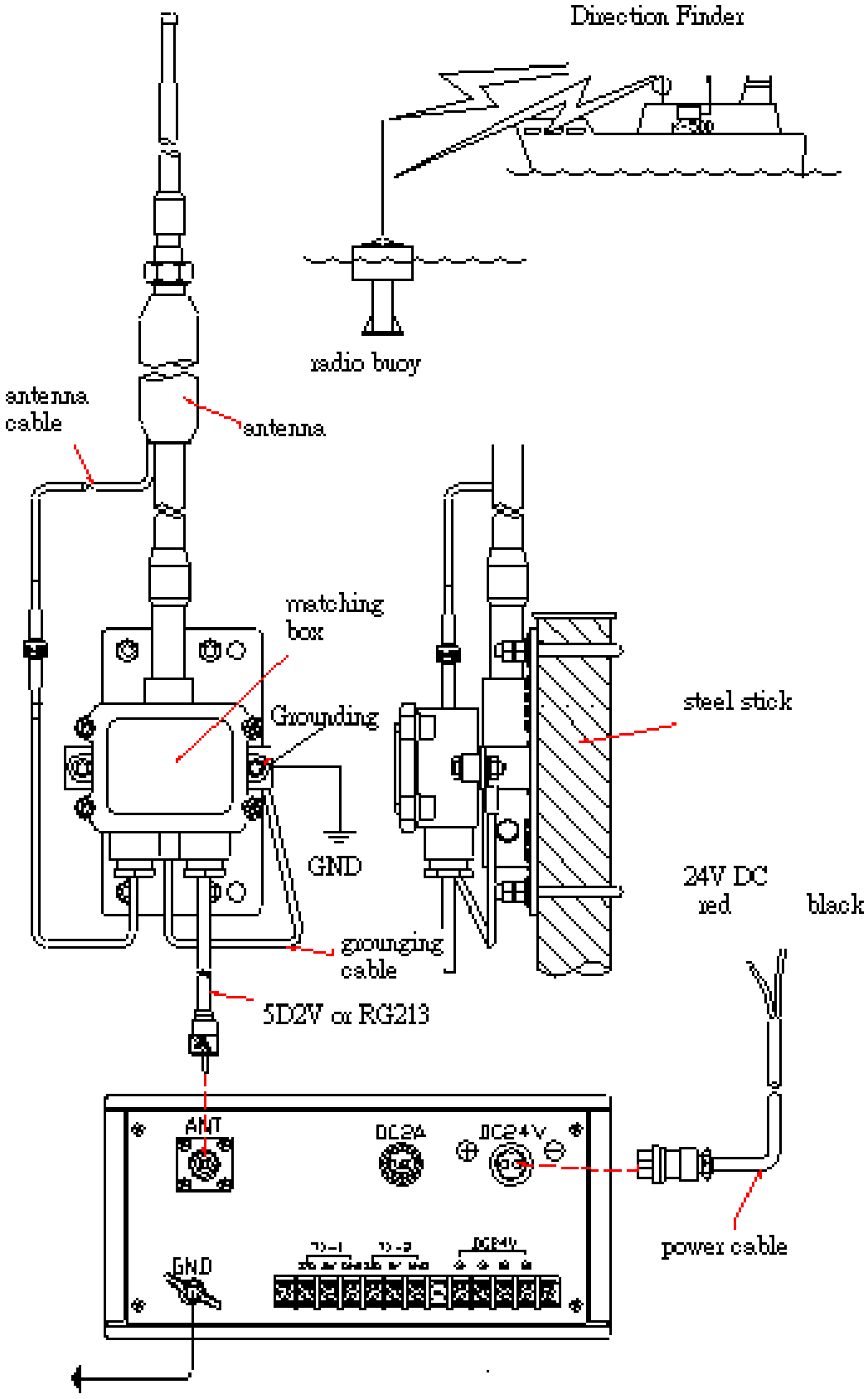
Step 3: Pull out the panel board, put on the 2 PIN short circuit kit on the CN-103 socket. (Figure-2)

Step 4: Turn on power; adjust the coil adjust screw that inside the matching box (Figure-3). Let the neon indicator light to be illuminated in the best situation.

Step 5: Turn off power, take off 2 PIN shot circuit kit, push in the panel board, and put on 4 screws.

Step 6: Restart the power then push the Radio buoy button. The antenna current meter will swing.

NSC-K500 CONNECTED LAYOUT CHARTING



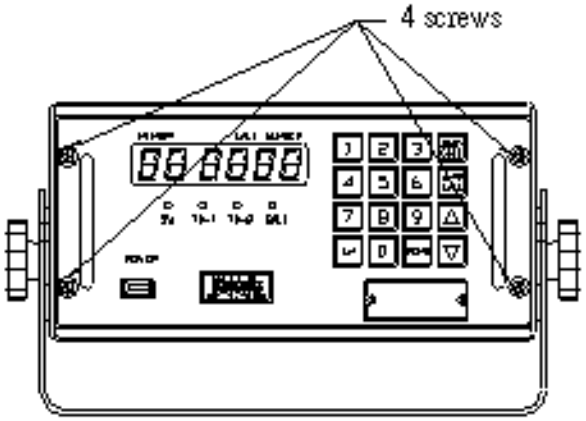


figure-1

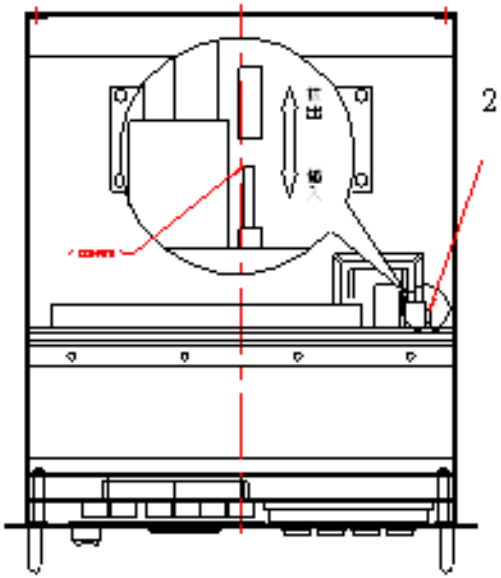


figure-2

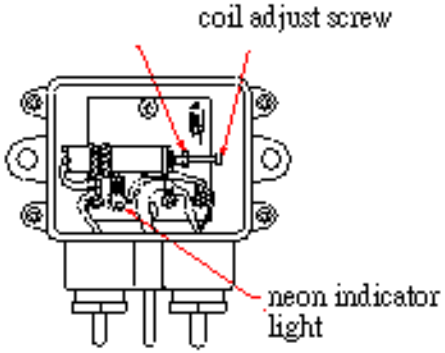


figure-3

k500-install-2