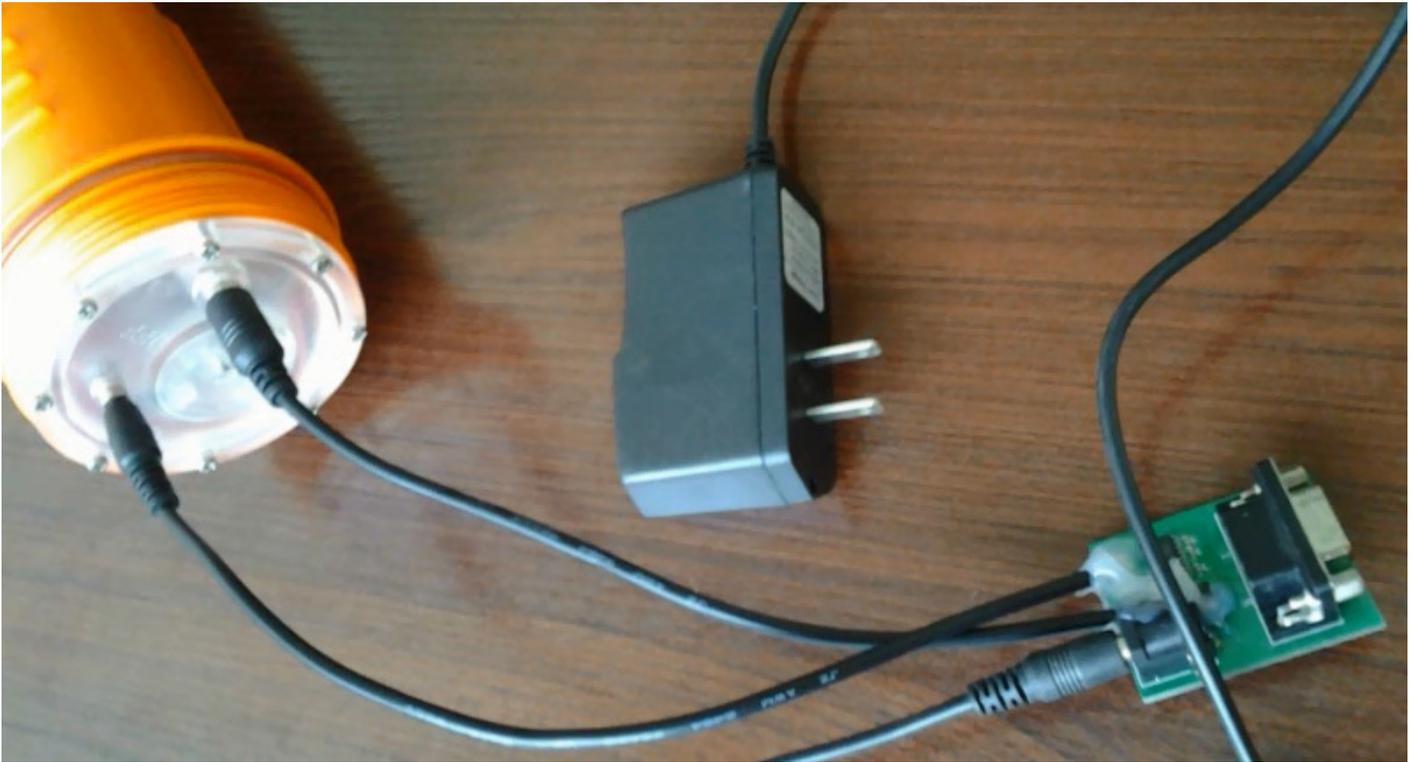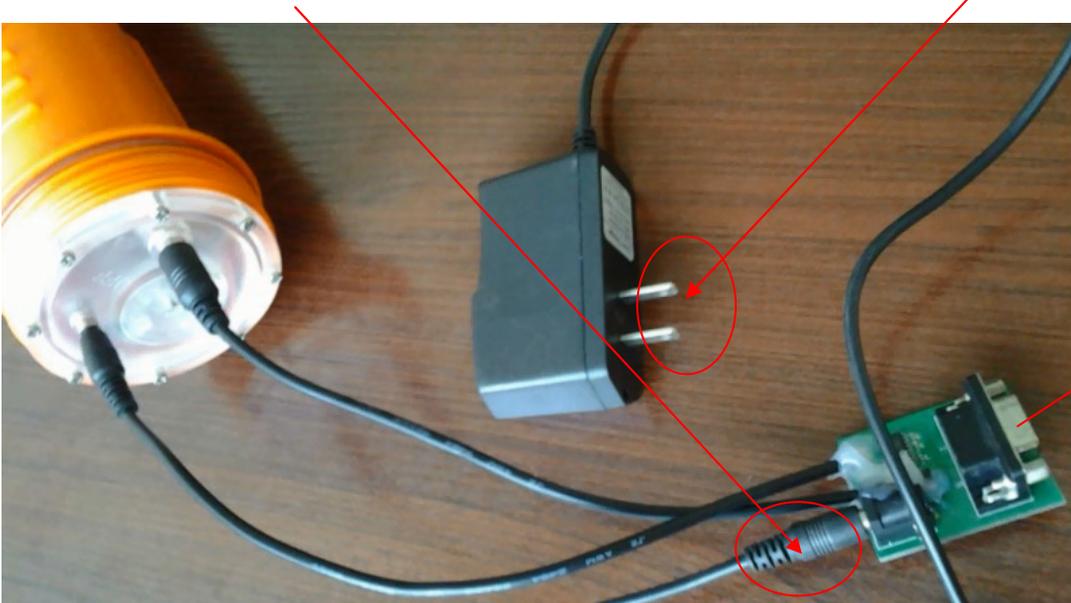Instruction of programming KS33NT :

The following is showing how to program your KS33NT :
1) Connect the programmer to the KS33NT as below diagram :
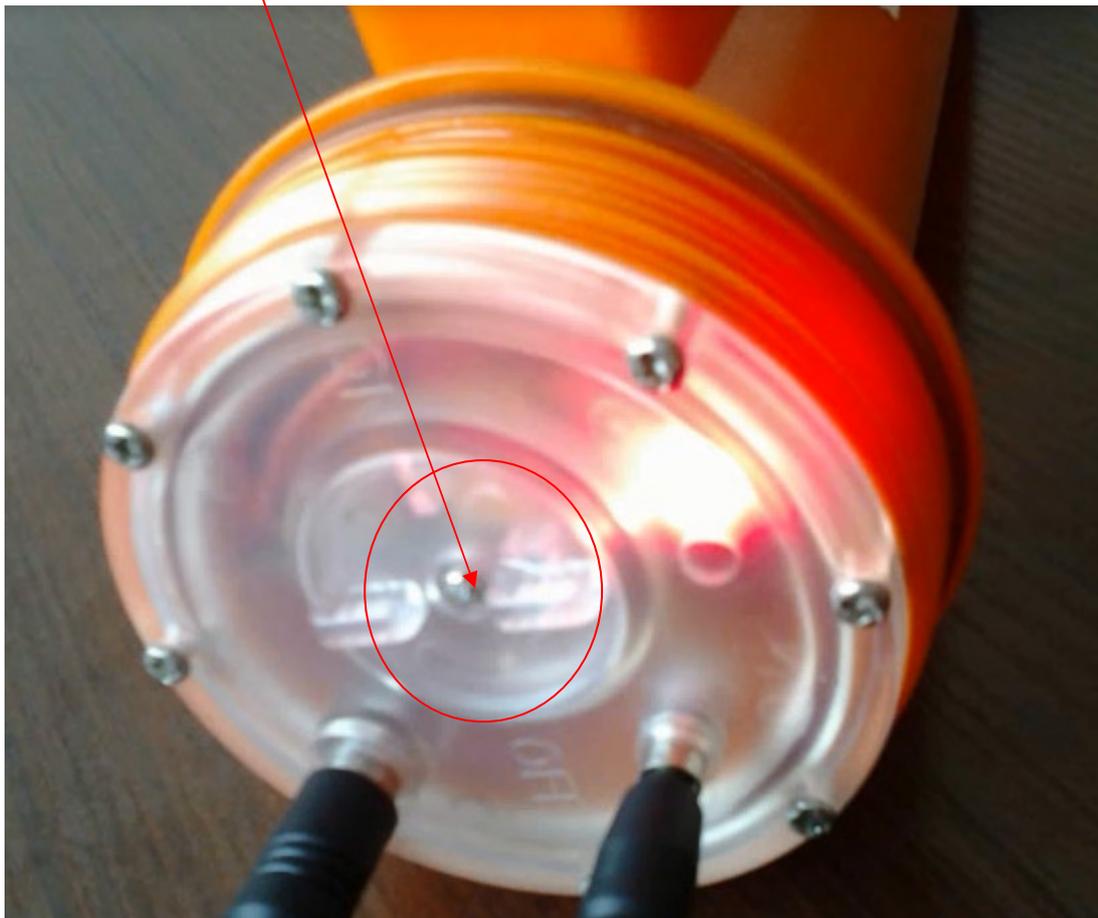

2) Connect the KS33NT charger to the programmer and plug the another end of the charger to AC power.

Connect to your PC with programming software

3) Turn the power switch of your KS33NT to "ON" position. You can find the indicator in KS33NT is illuminated means that your KS33NT is working.
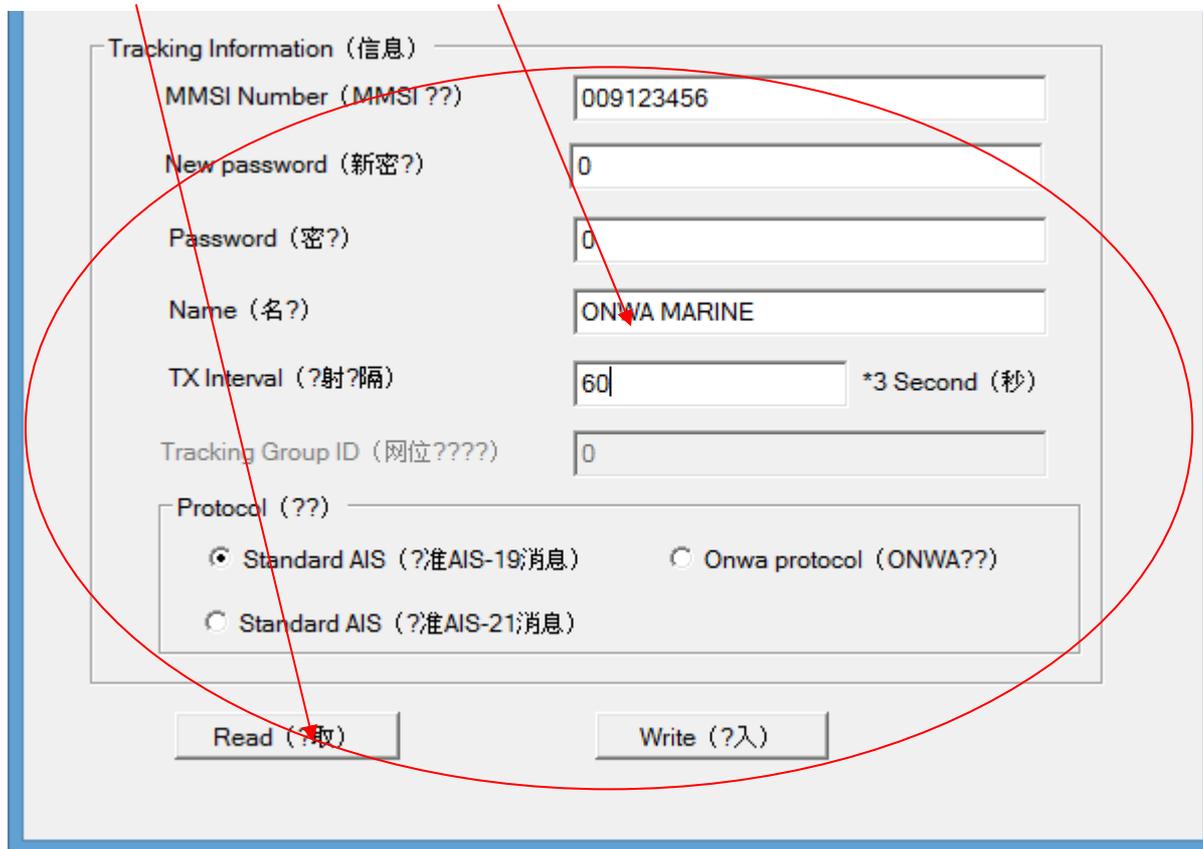

4) Run KS33NT programming software ONWA Tracking-Vx.x

5) Choose corresponding "Serial Port" and press "NOT Connect" (it will change to "Connected"), you can see rolling data showing on the below window :
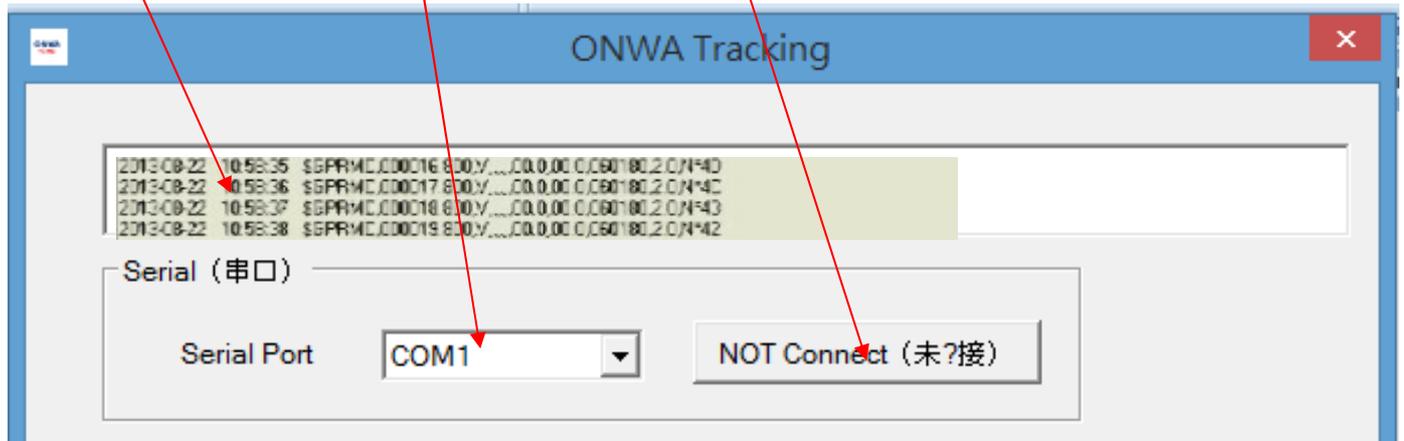
6) Click "Read" to read all the stored information in your KS33NT :

7) Make all the necessary changes :

- MMSI : 9 digits MMSI

- New password : To enter new password other than default "6666", if you don't want to change password just leave it "0". If you changed the password and you forget then you need to send back to us for unlock the password.

- Password : Enter correct password before write the new settings, the default password is "6666".

- Name : Max. 20 numeric or characters.

- TX Interval : seconds at a multiple of 3, example if you want to enter TX interval for 3 minutes then you need to enter 60 then the TX interval is set to 60 x 3 = 180seconds (3 minutes)

- Tracking Group ID : From 00000 to 99999 , It is an option only available when you choose Protocol = Onwa protocol.
- Protocol : There are 3 transmitting protocol,

    1) Standard AIS with message 19 , please see Appendix A

    2) Standard AIS with message 21, please see Appendix B

    3) Onwa protocol : only can be seen by Onwa AIS with same Tracking Group ID.

8) After finish editing, click "Write" to program all changes.

9) Finish programming, you can remove the programming kit and start to use your KS33NT.

Thanks for choosing Onwa KS33NT.

MESSAGE 19: EXTENDED CLASS B EQUIPMENT POSITION REPORT*

Parameter	Bits	Description
Message ID	6	Identifier for Message 19; always 19
Repeat indicator	2	Used by the repeater to indicate how many times a message has been repeated.; 0-3; 0 = default; 3 = do not repeat any more
User ID	30	MMSI number
Spare	8	Not used. Should be set to zero. Reserved for future use
SOG	10	Speed over ground in 1/10 knot steps (0-102.2 knots) 1 023 = not available, 1 022 = 102.2 knots or higher
Position accuracy	1	1 = high (> 10 m) 0 = low (< 10 m) 0 = default
Longitude	28	Longitude in 1/10 000 min (180, East = positive (as per 2's complement), West = negative (as per 2's complement); 181 (6791AC0h) = not available = default)
Latitude	27	Latitude in 1/10 000 min (90, North = positive (as per 2's complement), South = negative (as per 2's complement); 91º = (3412140h) = not available = default)
COG	12	Course over ground in 1/10= (0-3 599). 3 600 (E10h) = not available = default; 3 601-4 095 should not be used
True heading	9	Degrees (0-359) (511 indicates not available = default)
Time stamp	6	UTC second when the report was generated by the EPFS (0-59 or 60) if time stamp is not available, which should also be the default value or 61 if positioning system is in manual input mode or 62 if electronic position fixing system operates in estimated (dead reckoning) mode, or 63 if the positioning system is inoperative) Note: CSTDMA devices do not transmit if position information is not available.
Spare	4	Not used. Should be set to zero. Reserved for future use
Name	120	Maximum 20 characters 6-bit ASCII. @@@@@@@@@@@@@@@@@@@@ = not available = default
Type of ship and cargo type Provided by	8	0 = not available or no ship = default 1-99 = as defined 100-199 = reserved, for regional use

Parameter	Bits	Description
Message 24B		200-255 = reserved, for future use
Dimension of ship/reference for position Provided by Message 24B	30	Dimensions of ship in metres and reference point for reported position (see Fig. 42 and § 3.3.3)
Type of electronic position fixing device Provided by Message 24B	4	0 =?Undefined (default); 1 = GPS, 2 = GLONASS, 3 = combined GPS/GLONASS, 4 = Loran-C, 5 = Chayka, 6 = integrated navigation system, 7 = surveyed; 8 = Galileo, 9-15 = not used
RAIM-flag Provided by Message 18	1	RAIM (Receiver autonomous integrity monitoring) flag of electronic position fixing device; 0 = RAIM not in use = default; 1 = RAIM in use see Table 47
DTE Provided by Message 18 (Display Flag)	1	Data terminal ready (0 = available 1 = not available; = default) (see § 3.3.1)
Assigned mode flag Provided by Message 18 (Display Flag)	1	0 = Station operating in autonomous and continuous mode = default 1 = Station operating in assigned mode
Spare	4	Not used. Should be set to zero. Reserved for future use
Number of bits	312	Occupies two slots.

MESSAGES 21 : AIS AIDS TO NAVIGATION (ATON) REPORT

Parameter	Bits	Description
Message ID	6	Identifier for Message 21
Repeat indicator	2	Used by the repeater to indicate how many times a message has been repeated.
ID	30	MMSI number
Type of aids-to-navigation	5	0 = not available = default; refer to appropriate definition set up by IALA; see Table below
Name of Aids-to-Navigation	120	Maximum 20 characters 6-bit ASCII, as defined in Table 47 "@@@@@@@@@@@@@@@@@@@@" = not available = default. The name of the AtoN may be extended by the parameter "Name of Aid-to-Navigation Extension" below
Position accuracy	1	1 = high (£10 m) 0 = low (>10 m) 0 = default
Longitude	28	Longitude in 1/10 000 min of position of an AtoN (±180°, East = positive, West = negative 181 = (6791AC0$_h$) = not available = default)
Latitude	27	Latitude in 1/10 000 min of an AtoN (±90°, North = positive, South = negative 91 = (3412140$_h$) = not available = default)
Dimension/ reference for position	30	Reference point for reported position; also indicates the dimension of an AtoN. See Figure below.
Type of electronic position fixing device	4	0 = Undefined (default) 1 = GPS 2 = GLONASS 3 = Combined GPS/GLONASS 4 = Loran-C 5 = Chayka 6 = Integrated Navigation System 7 = surveyed. For fixed AtoN and virtual AtoN, the charted position should be used. The accurate position enhances its function as a radar reference target 8 = Galileo 9-14 = not used 15 = internal GNSS
Time stamp	6	UTC second when the report was generated by the EPFS (0-59 or

Parameter	Bits	Description
		60) if time stamp is not available, which should also be the default value or 61 if positioning system is in manual input mode or 62 if electronic position fixing system operates in estimated (dead reckoning) mode or 63 if the positioning system is inoperative)
Off-position indicator	1	For floating AtoN, only: 0 = on position; 1 = off position. NOTE 1 – This flag should only be considered valid by receiving station, if the AtoN is a floating aid, and if time stamp is equal to or below 59. For floating AtoN the guard zone parameters should be set on installation
AtoN status	8	Reserved for the indication of the AtoN status 00000000 = default
RAIM-flag	1	RAIM (Receiver autonomous integrity monitoring) flag of electronic position fixing device; 0 = RAIM not in use = default; 1 = RAIM in use see Table 50
Virtual AtoN flag	1	0 = default = real AtoN at indicated position; 1 = virtual AtoN, does not physically exist.
Assigned mode flag	1	0 = Station operating in autonomous and continuous mode = default 1 = Station operating in assigned mode
Spare	1	Spare. Not used. Should be set to zero. Reserved for future use
Name of Aid-to-Navigation Extension	0, 6, 12, 18, 24, 30, 36, ... 84	This parameter of up to 14 additional 6-bit-ASCII characters for a 2-slot message may be combined with the parameter "Name of Aid-to-Navigation" at the end of that parameter, when more than 20 characters are needed for the name of the AtoN. This parameter should be omitted when no more than 20 characters for the name of the A-to-N are needed in total. Only the required number of characters should be transmitted, i.e. no @-character should be used
Spare	0, 2, 4, or 6	Spare. Used only when parameter "Name of Aid-to-Navigation Extension" is used. Should be set to zero. The number of spare bits should be adjusted in order to observe byte boundaries
Number of bits	272-360	Occupies two slots