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Disclaimer

The contents of this instruction manual are well prepared by AMEC. While we try to improve our MOB products at all times, AMEC shall incur no liability based on the contents, updates or modification of the contents, or the lack of contents in this instruction manual.

1. Warming

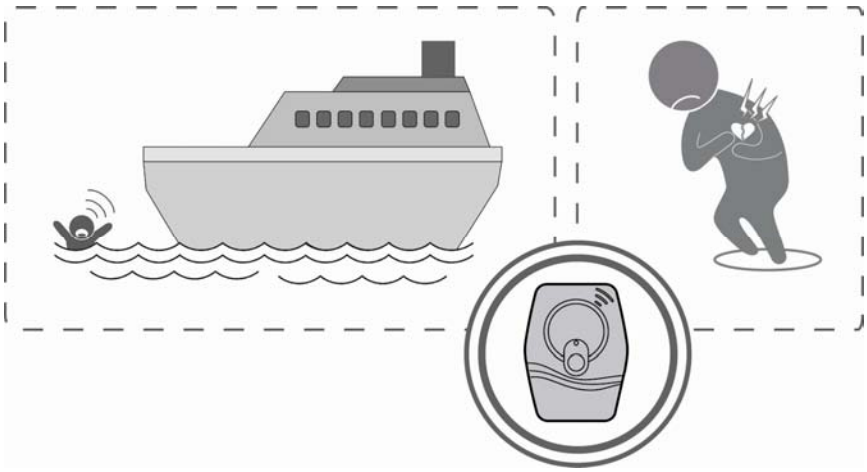
Thank you for choosing AMEC MOB Dolphin Man Overboard system (hereafter called “MOB”or “PRODUCT”). This product is an auxiliary safety system. Solely rely on information provided by the PRODUCT or any neglects may resulted in incomplete safety coverage this PRODUCT enhances crew safety and provide additional protection only under safety instruction and procedures are obeyed in accordance with local requirements. In addition, any improper use, false installation, or maintenance, may leads to unpredicted product performance failure. Please carefully read the instruction manual before using this PRODUCT.

2. About this instruction manual

This instruction manual is especially written for AMEC MOB Dolphin system where its installation instruction as well as product application can be only applied to AMEC MOB Dolphin system. Please follow the manual instruction for system installation. Most of the installation can be performed by system monitors or users. Any product damage that caused from failure to operate the installation in accordance with instruction will incur no liability or compensation to AMEC. This instruction manual may help you getting started with AMEC Dolphin system. The product introduction will begin from product package, and then lead you step by step to get a better understanding of each product function.

3. MOB System instruction

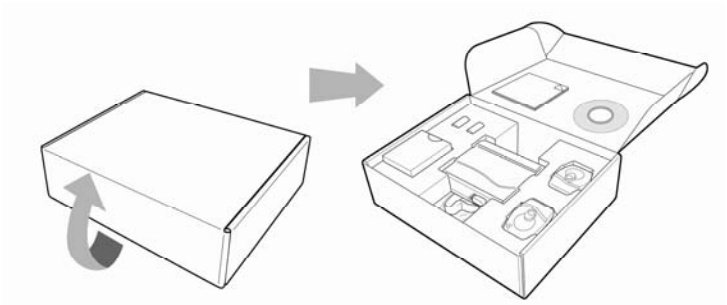
AMEC MOB Dolphin is a 2.4GHz wireless radio frequency transmission system comprising MOB controller, pendants, and repeaters. The MOB system works through continuous signal links between the controller and the pendant. The MOB system will automatically send out the alert to notify the system monitor or other members to be aware of possible emergencies while receiving no signal due to out of signal coverage range or by the pendant button manually activated. This product can be used independently, or may also compatible with AMEC AIS series system (Automatic Identification System) for optimum performance, or can be linked to the personal computer for further functional extension and monitoring.

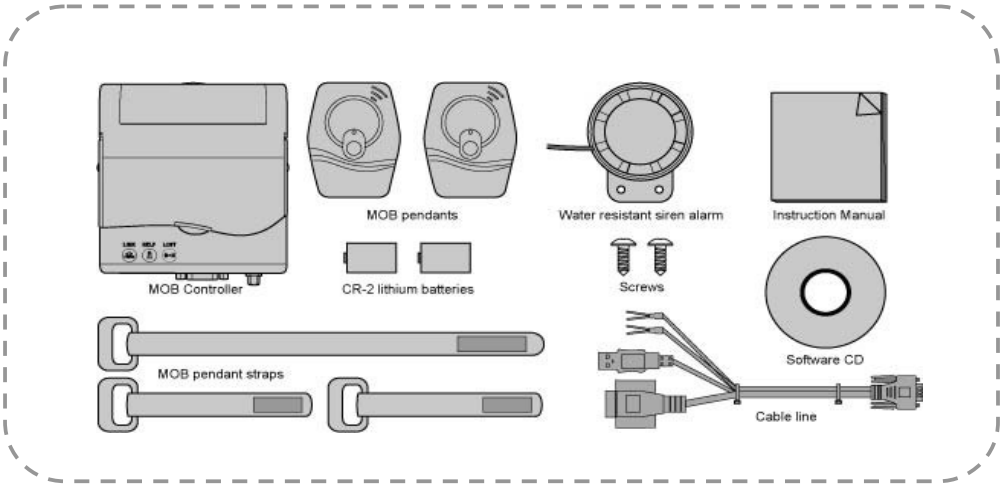


3.1 Product Features:

- Supports up to 99 pendants simultaneously.
- The battery operational life is up to 2,000 hours.
- Ideal base station range is up to 100ft (30m), and can be extendable with MOB repeaters.
- Manual activation for emergency help by pressing the pendant button.
- Extra loud water resistant siren alarm.
- 1W high bean white LED.
- Light weight, and easy to carry on wrist, arm, pets' neck or on the straps of the life jacket.
- Compatible with AMEC AIS series products (Camino-101), SRM (Safety Related Message) message enabled under special emergency condition.

3.2 Parts Supplied





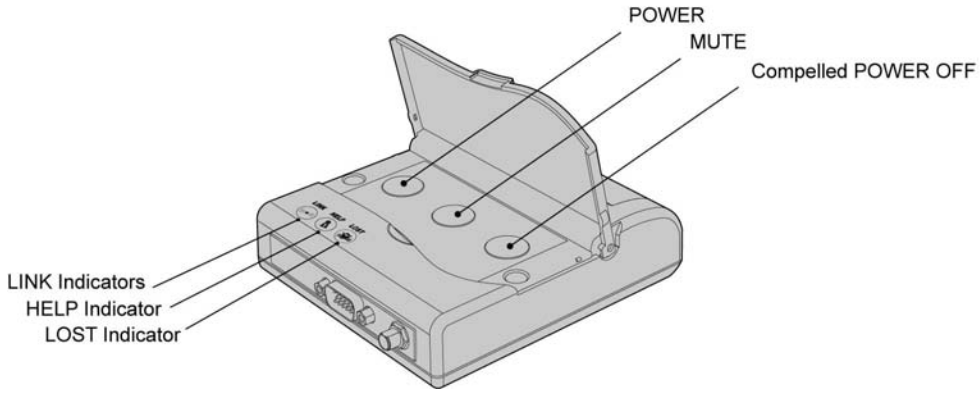
3.2.1 Standard package

- MOB Controller
- MOB pendants
- Water resistant siren alarm
- CR-2 lithium batteries
- Cable line
- MOB pendant straps
- Instruction Manual
- Software CD
- Screws

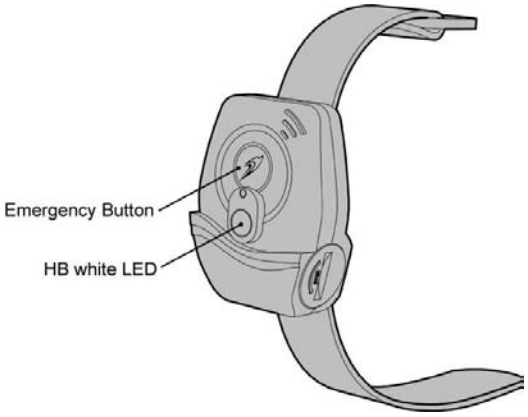
3.2.2 Optional accessories

- MOB pendants
- MOB repeaters
- MOB pendant straps
- MOB pendant extension straps
- MOB pendants extension straps for pets use only.
- Please browse AMEC website for more information of AMEC AIS series products on www. Alltekmarine.com.

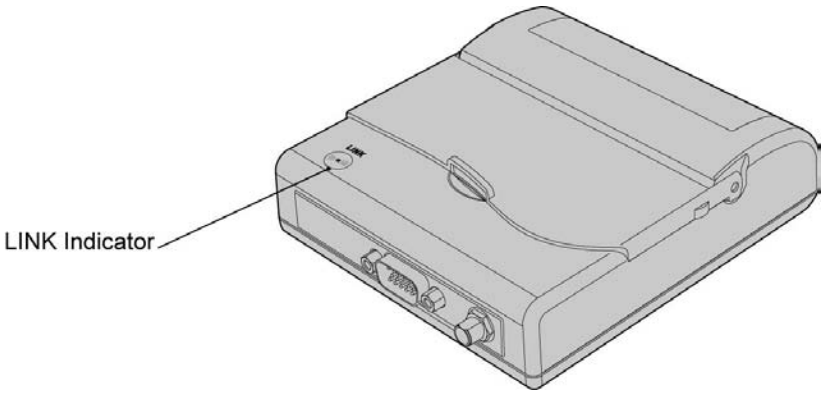
3.3 MOB Controller



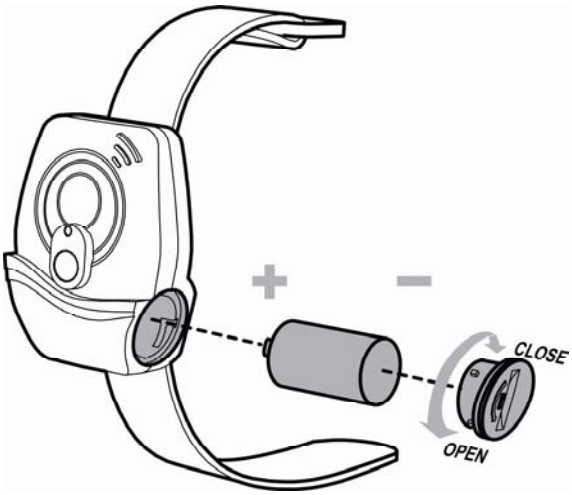
3.4 MOB Pendants



3.5 MOB Repeater



3.6 Battery



3.6.1 Using Battery Precaustion

1. The MOB Dolphin system disposable CR-2 lithium batteries, please DO NOT attempt to recharge these batteries. Also please make sure these batteries are replaced with the same type and shape of batteries. Any incorrect battery model replacement or misusing may cause unpredictable product damage or impact product performance, AMEC shall incur no liability for the improper use.

2. Please DO NOT use a sharp object to open the battery cap of the pendant.

3. Please DO NOT replace the battery in wet, dirty or in any other harsh conditions.

4. Please DO NOT expose the battery to fire or ignition.

5. Please recycle the used battery at right place.

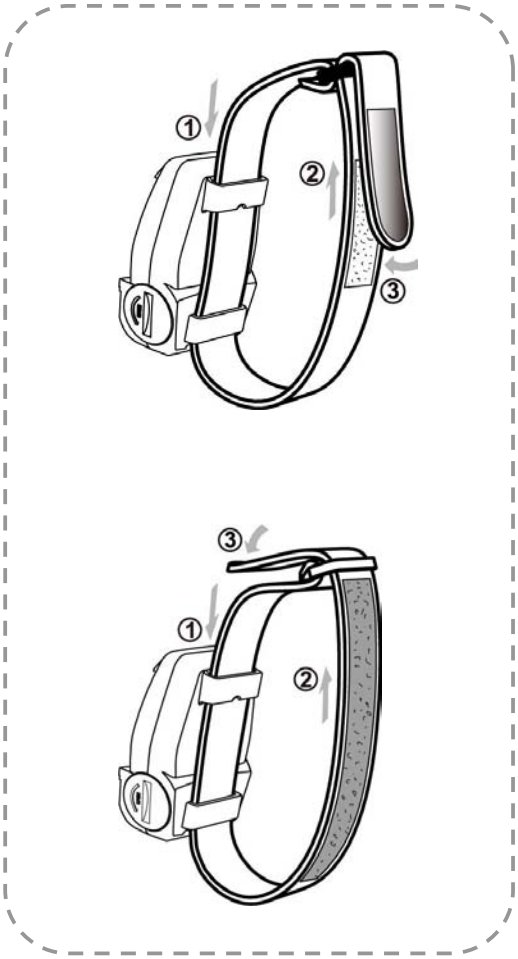
3.6.2 Replacing the Pendant Battery

1. Please use appropriate to open the battery cap.

2. Please ensure correct polarity before inserting the battery.

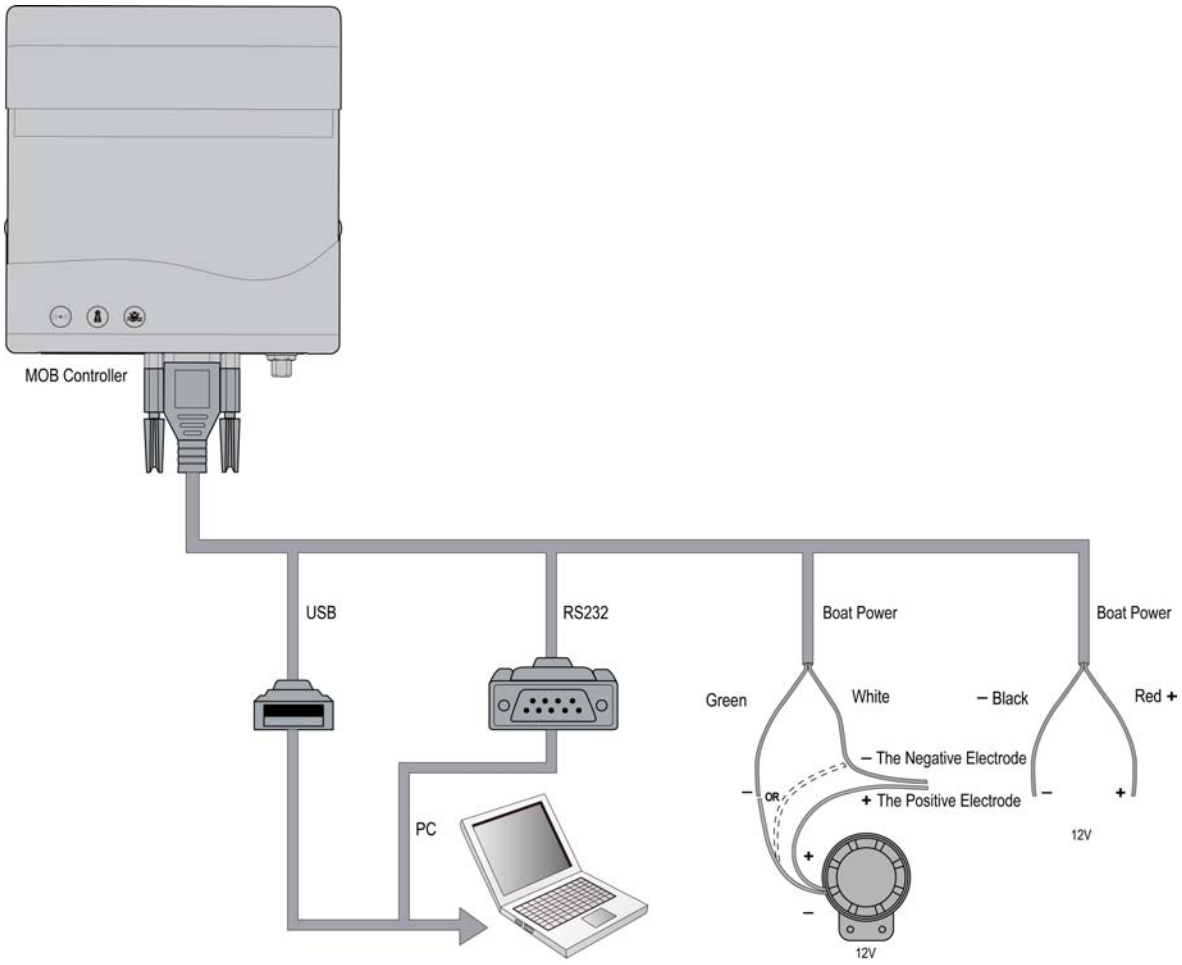
3. Please use appropriate coin to fasten the battery cap.

3.7 Wearing Your Pendant



3.8 Siren Alarm

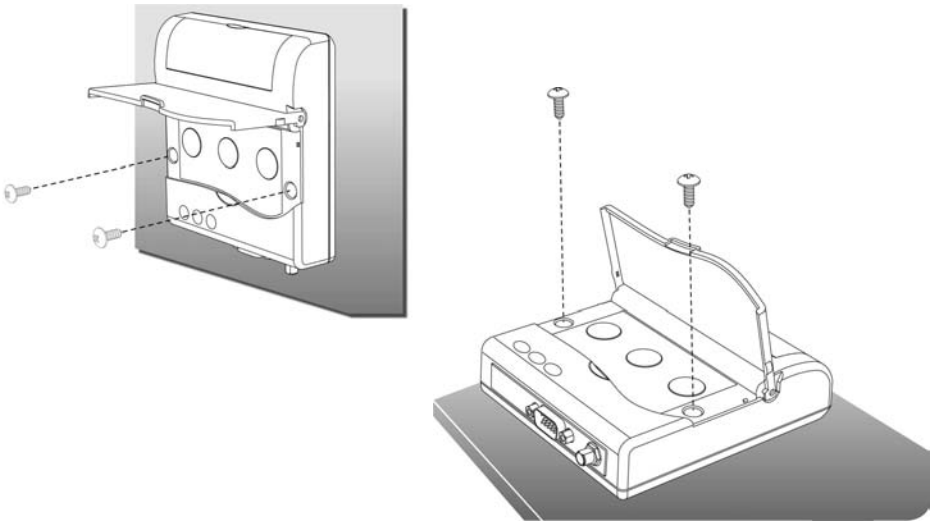
3.9 MOB Wiring



. MOB System Installation Guide

4.1 MOB Installation Overview

The MOB system can be installed in either way: Table mounting or wall mounting (AMEC incur no liability to the product damage or unsatisfactory performance resulted from improper installation). Please connect the MOB system to a DC 9~30V power source (12V DC is highly suggested). In addition, please do not expose the unit to rain or moisture in case for any possible danger such as electricity shock or fire.



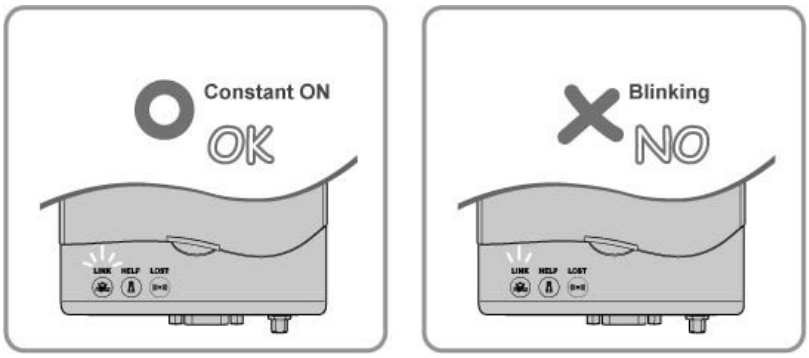
4.2 MOB Repeater Installation Precaution

The theoretical signal transmission ranges up to 30 meters and can be extended by additional repeaters. Please explore a suitable place before the installation. The MOB signal may be affected by location, construction materials, or other interfering radio frequency signals that may decrease the working range. To ensure satisfactory system operation, it is strongly recommended to carry out a site survey before permanently installing the MOB repeaters. The wall mounting for repeaters is highly recommended.

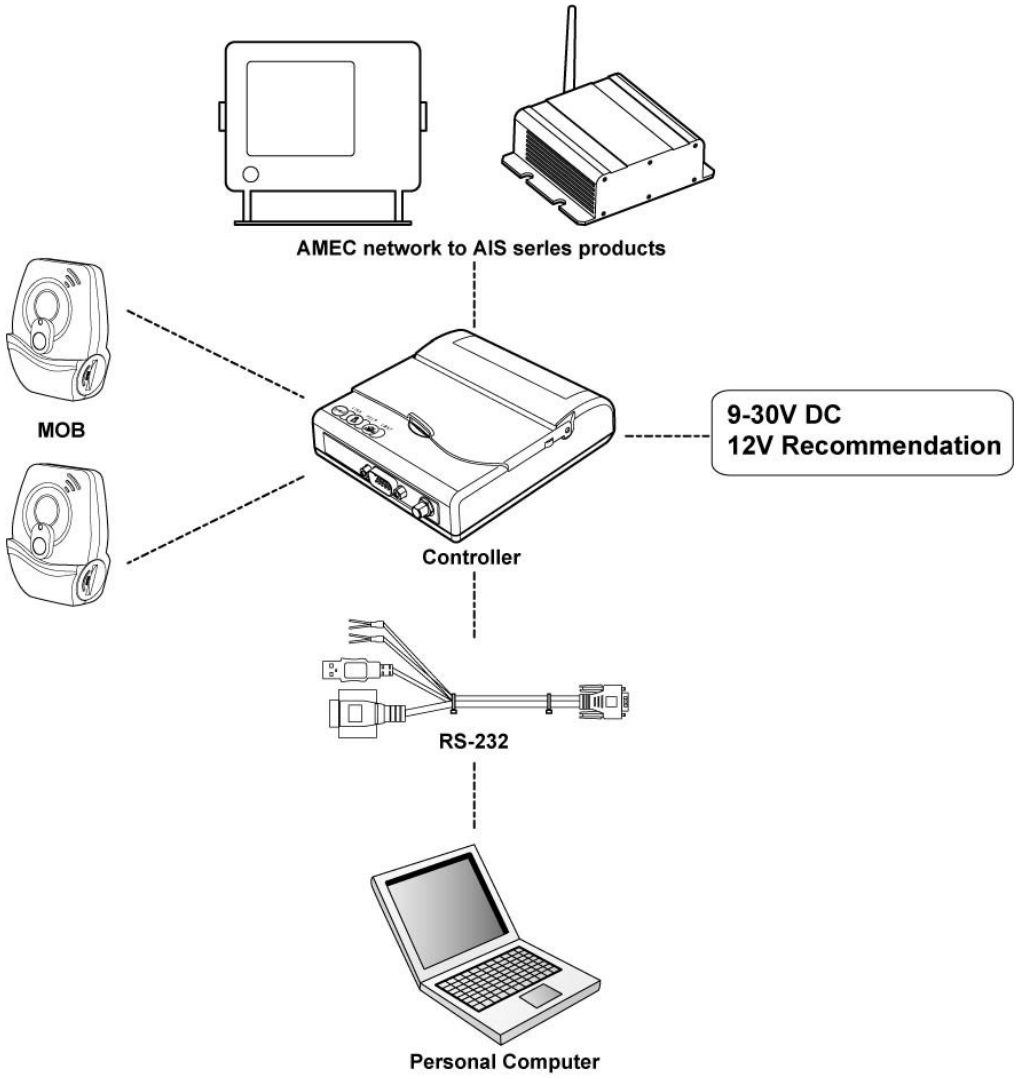
4.2.1 Site Survey

The MOB repeater, the optional equipment, may efficiently extend the covering range. It is highly recommended to exercise the following instruction for best products performance. Please connect the MOB repeater to a DC 9~30V power source (12V DC is highly suggested), and then press and hold the power button until the indicator lights BLUE after opening the MOB controller cap. Take the MOB repeater to the desired place and connect to power source. The repeater indicator starts to flash GREEN in the beginning and then lights remains constant after 10 seconds, implying a normal linkage between controller and repeater has been built.

Note: The frequency of LED flashing is a good installation reference. LED constant ON implies a good installation; and slow flicking LED indicates bad signal receiving, please change to other places.



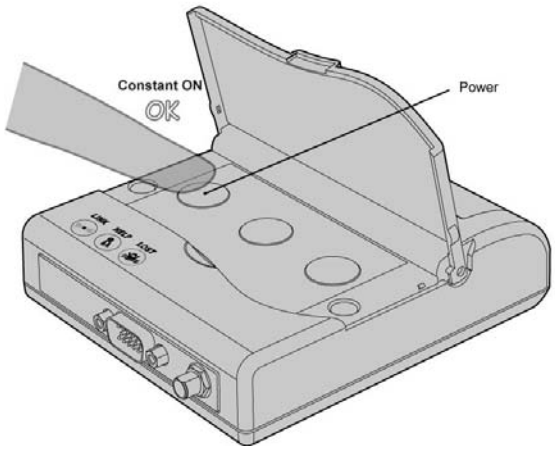
4.3 MOB System Integration



4.4 Turning the MOB Controller On

4.4.1 Turning the MOB Controller On

1. Press and hold he POWER to turn on the MOB controller until power indicators flash BLUE constantly,



4.4.2 Turning the MOB Controller Off

Press and hold the POWER switch to turn off the MOB controller until indicators light off. Please ensure LINK indicator off before switching off. Link off means no pendants connecting with controller.

4.4.3 MOB Controller Indication Light Descriptions

- When POWER indicator constantly lights BLUE, it means the MOB controller is on and operating.
- When LINK indicator flashes GREEN, it implies the MOB controller is in monitoring pendants.
- When LINK indicator constantly lights GREEN, it means the MOB controller is turning off.
- When HELP indicator flashes RED, it implies the pendant user is seeking for help.When LOST flashes RED, it means the linkage between pendant users and the MOB controller is disconnect.

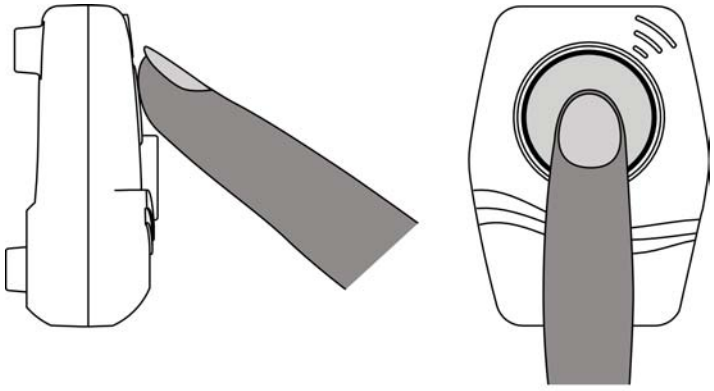
Table 4-1 Indicators summary

Indicator and Color	Indicator Action	Indicator Definition
Power Indicator (Power)	Constant Blue	Power On
Link Indicator (Link)	Flash Green	Monitoring Pendants
Link Indicator (Link)	Constant Green	MOB Controller is Off
Help Indicator (Help)	Flash Red	Pendant user is seeking for help
Lost Indicator (Lost)	Flash Red	Disconnection between the pendant and controller

4.5 Turning the MOB Pendant On/Off

4.5.1 Turning the MOB Pendant On

1. Hold down the pendant button to power on.
2. The pendant indicator will flash GREEN for 3 seconds, and then activate and operate.
3. The pendant will build up signal link with MOB controller, and then flash alternates RED and GREEN while connecting. The LED flashes GREEN every 2 seconds when the connection is successfully built.
4. The pendant will automatically power off if failure to build the connection with MOB controller around 3 minutes after power-on.



4.5.2 Turning the MOB Pendant Off

The MOB Dolphin is designed as management-oriented to ensure the efficient and effective crew member safety management. Only 2 alternatives are provided to switch off pendants to prevent accidental and unexpected power-off. Pendants power-off must be completed through controller.

4.5.2.1 Turning the Pendant Off from PC

Users may power off pendants from PC side under the normal operation. The pendant indicator will light RED constantly in the beginning and then power off. Furthermore, users may switch specific pendants off through laptop PC.

4.5.2.2 Turning the Pendant Off from MOB Controller

1. Users may hold down the Pendant Power OFF on the controller; and LINK lights constant GREEN.
2. Remains hold on the button till LINK indicator off.

Note:

Compelled POWER OFF Button

Please be reminded all the connected pendants will be shut down if the POWER OFF button is activated.

4.6 Turning the MOB Repeater On/Off

4.6.1 Turning the MOB Repeater On

1. Connect the MOB repeater with the power input.
2. The MOB repeater indicator will flash GREEN and then activate.

4.6.2 MOB Repeater Indication Light Description

- (LINK)
  - The LINK indicator on the repeater lights constant GREEN, then the linkage with controller is successful.
  - The flicking GREEN LINK means unstable signal or searching for controller.

4.6.3 MOB Repeater Note

- Please confirm both POWER and LINK indicators ON to ensure normal operations.
- Connect the MOB repeater to a DC 9~30V on board (12DC is highly suggested).
- As the number of mounted repeaters increases, the number of pendant under monitored coverage would be relatively decreased.

  The suggested number of repeaters and relatively correspondent pendant is as followed.

  99 ÷ (the number of repeaters+1)= the number of monitored pendants

  That is, when two repeaters are installed, the corresponded pendants under satisfactory monitoring are 33 (99÷3=33). In that case, when four repeaters are installed, the recommended pendants under satisfactory monitoring are 20 (99÷5≒20).

4.7 Description of MOB Controller Siren Alarm Sound

- Either pendant users lost or users push emergency button will cause siren alarm. If any of the scenarios happens, please take immediate action.
- The siren Chirps every 10 seconds in short tone; it indicates in sufficient pendant battery. It is suggested to check pendant power status through laptop viewer program. Please change battery immediately if short of battery power to ensure crew safety.

Table 4-2 Siren Alarum Summary

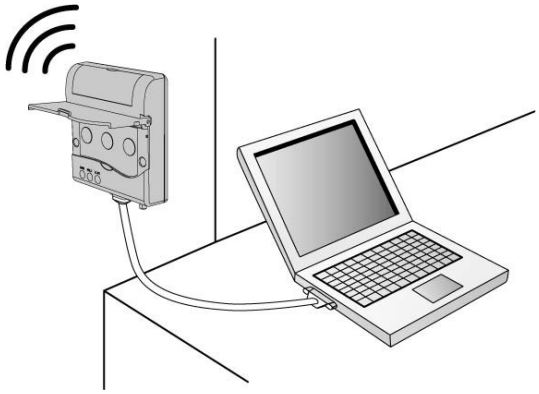
Siren Sound	Alarm Function Type	Siren Sound Definition
Alarm	Constant Alert	Pendant user lost Pendant users seek help
Chirps	Every 10 secs	Pendant battery power is low

4.7.1 Description of MOB Controller MUTE Button

The siren alarm activates when emergencies happens. Users may switch off the alarm by pushing MUTE button on the controller after taking suitable actions.

4.7.2 Note:

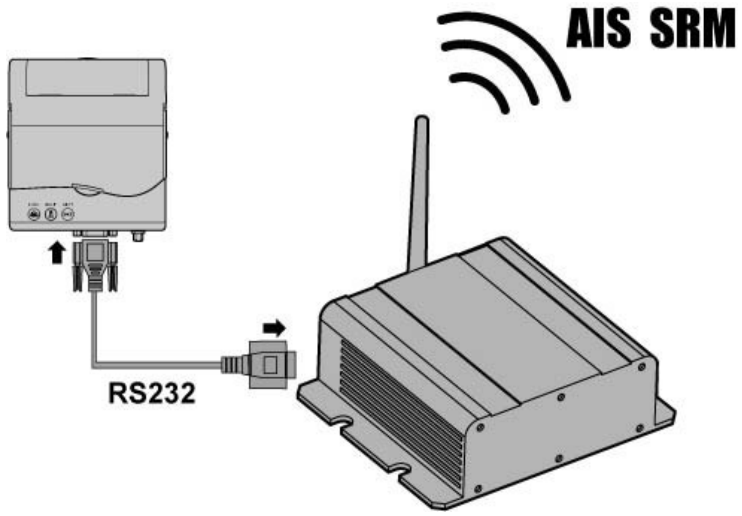
- The LOST or HELP indicator remains ON even after pushing MUTE. Users may remove the alert by the followings:
  1. While not connecting with PC:
     - Hold the MUTE button of the MOB controller to cancel.
  2. While connecting with PC:
     - Users may cancel the alert of the specific or all the pendants from the viewer program.



- Please be reminded users are not allowed to remove alert while pendants under emergencies.
- MOB system can be configured to broadcast AIS SRM automatically if connected with AMEC Class B AIS (CAMINO-101, Optional).

Note:

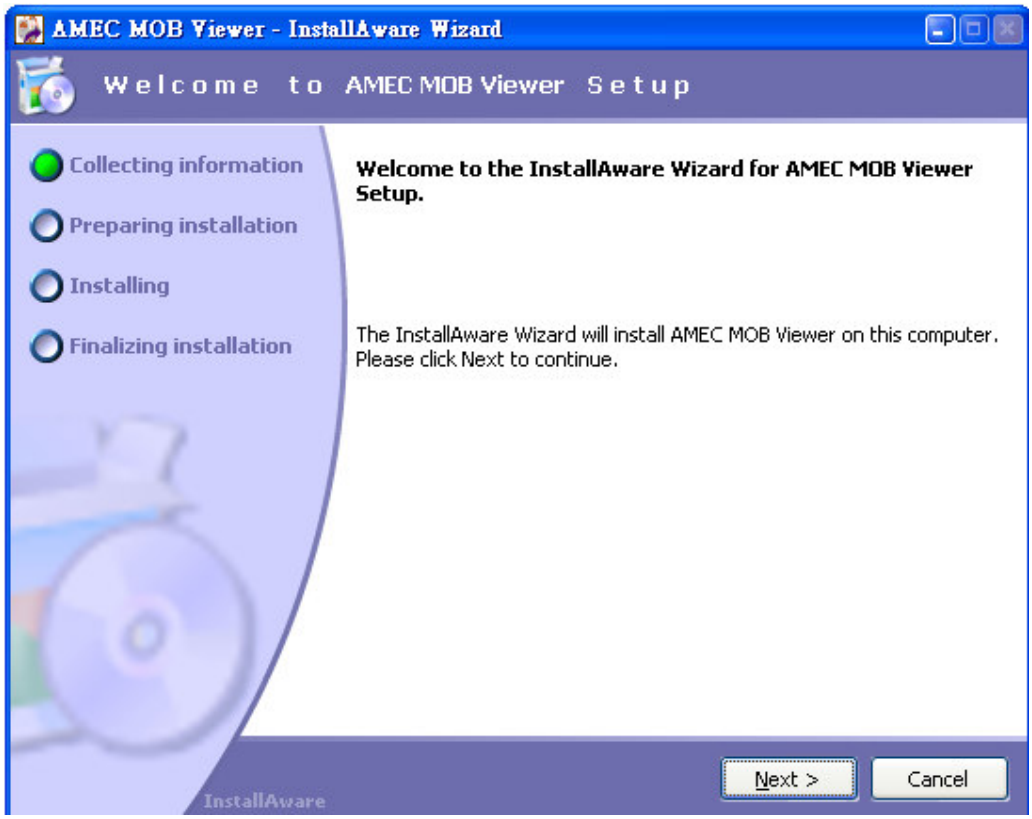
Users may configure to have automatic SRM broadcasting or manual activation through viewer program.



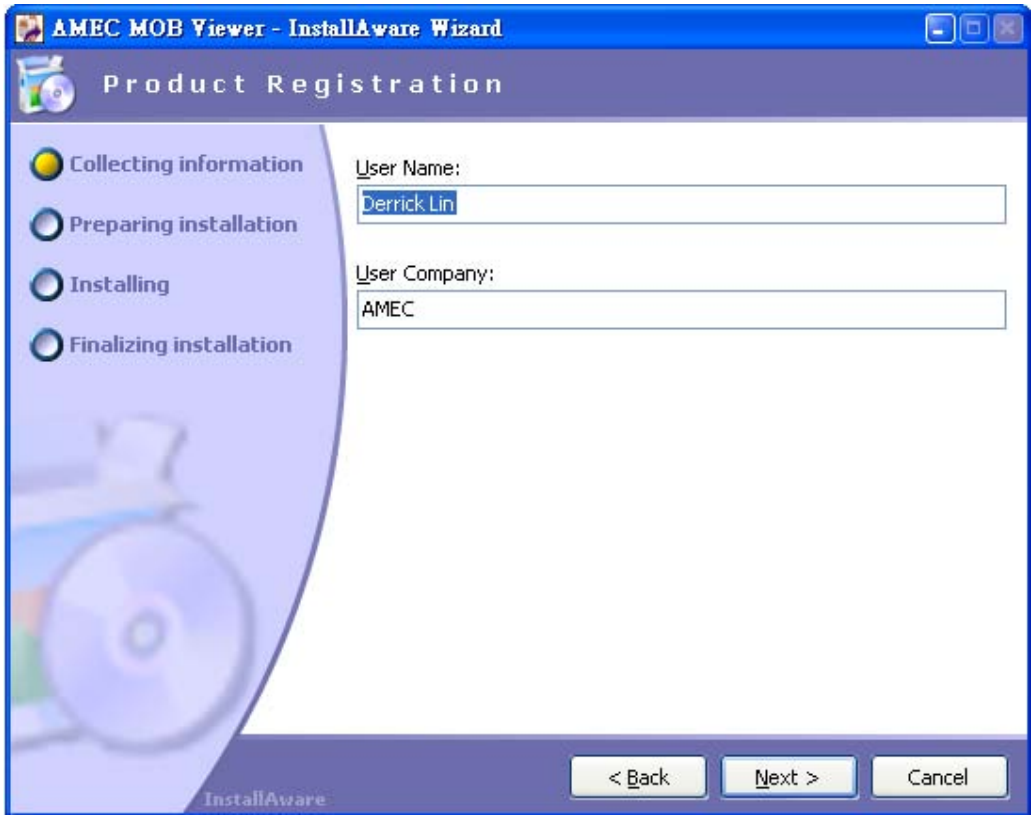
4.8 MOB Software Viewer Program Installation

The provided software in the package instruments a comprehensive status of the system and pendants. Please follow the instructions to install MOB viewer program. Please insert CD to your laptop and open AMEC MOB Viewer program folder to start the install action.

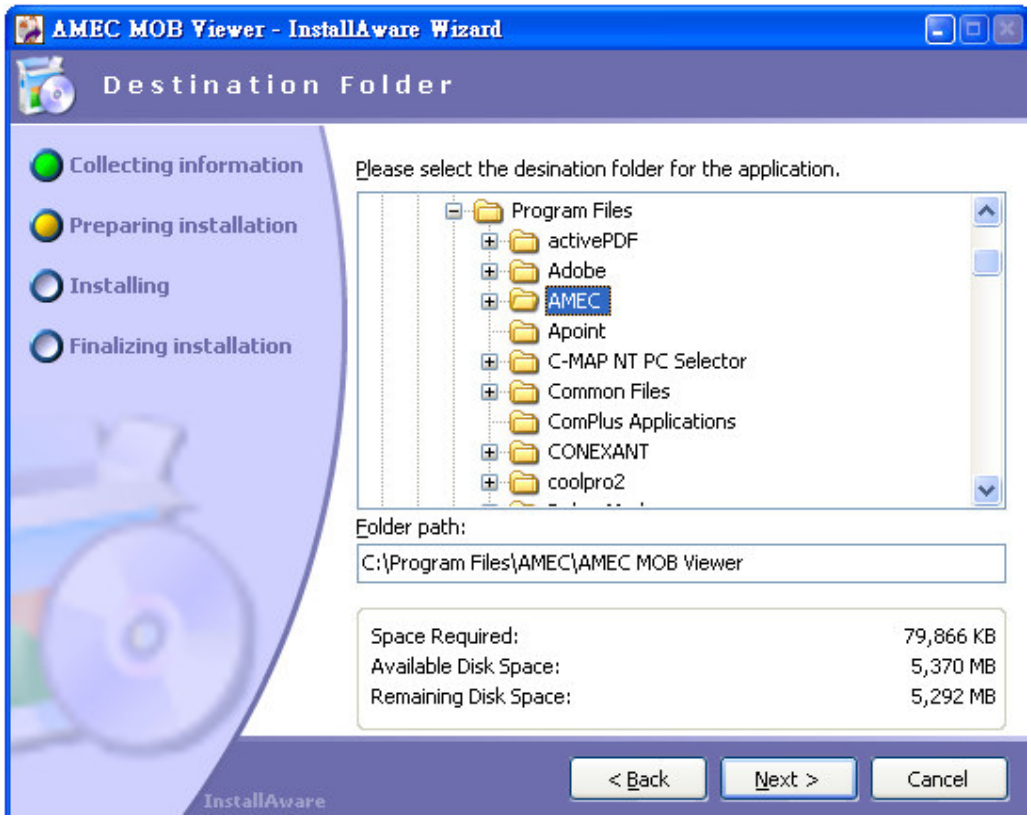
Step 1: Please click the “NEXT” to continue when InstallAware Wizard pops out.



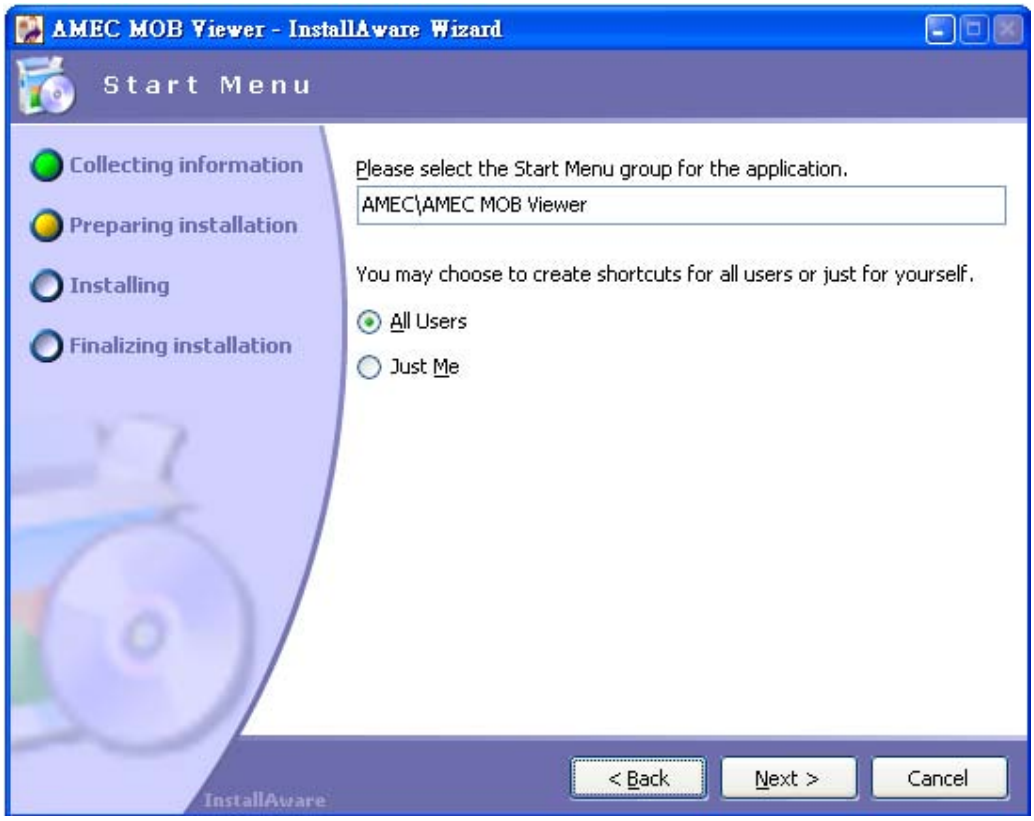
Step 2: Please fill in the required information and click on “NEXT” to continue.



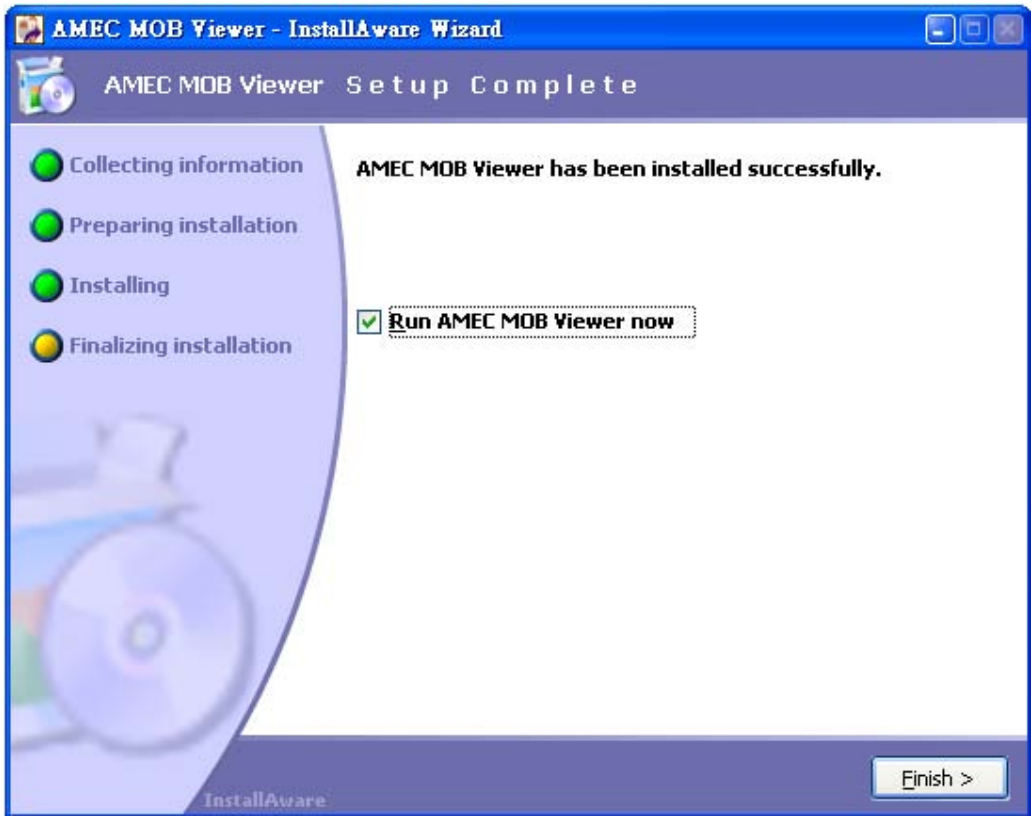
Step 3: Please select the destination folder or desired folder path, and click on “NEXT” to continue.



Step 4: Please select the Start Menu group for the application, and choose to create the shortcut for either for yourself or for all users. Click “NEXT” to continue.

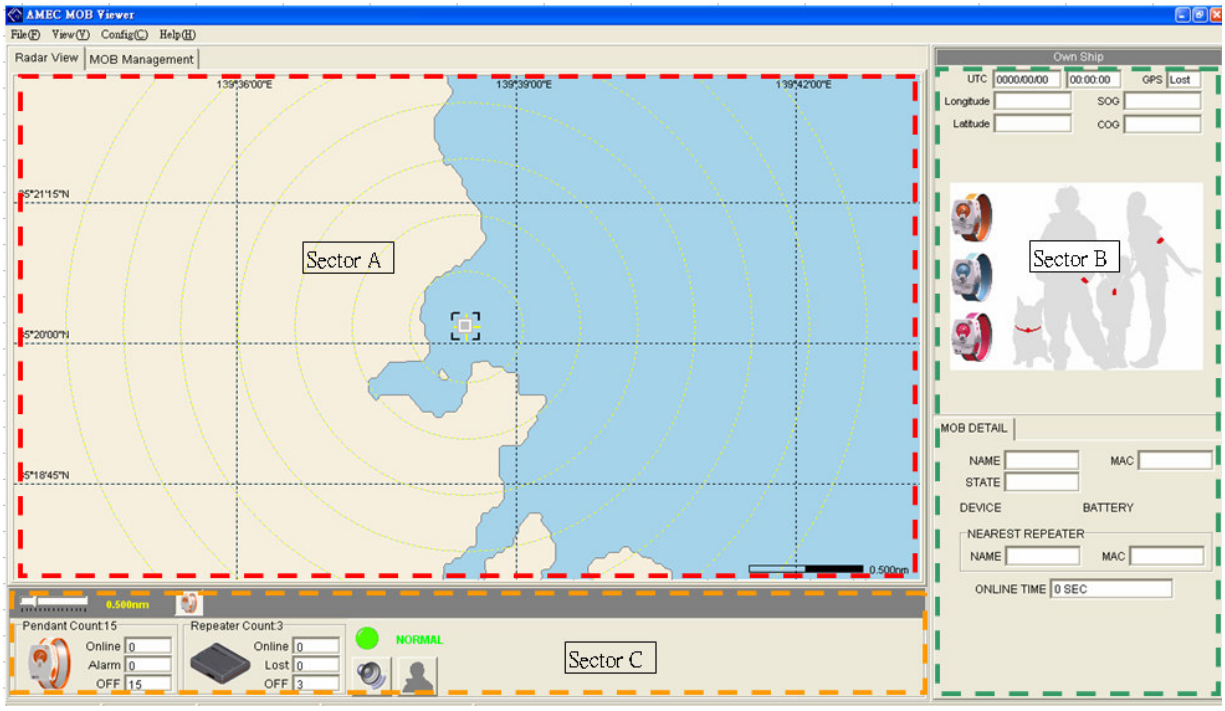


Step 5: The MOB software installation has been completed, please click “FINISH” to close or select “Run AMEC MOB View Now” for starting the program.



4.9 MOB Software Viewer Program Main Screen Overview

The program can be executed after the installations. The screen as attached can be segmented into 3 sectors. A, B and C. Sector A shows the sea map of the surroundings, and Sector B demonstrates MOB detailed information whereas pendant status and information are displayed in Sector C.



Zone A:

- Radar view: MOB events and AIS targets (optional) are provided.
- MOB management: Provides the general status of the connected pendants and repeaters.

Zone B:

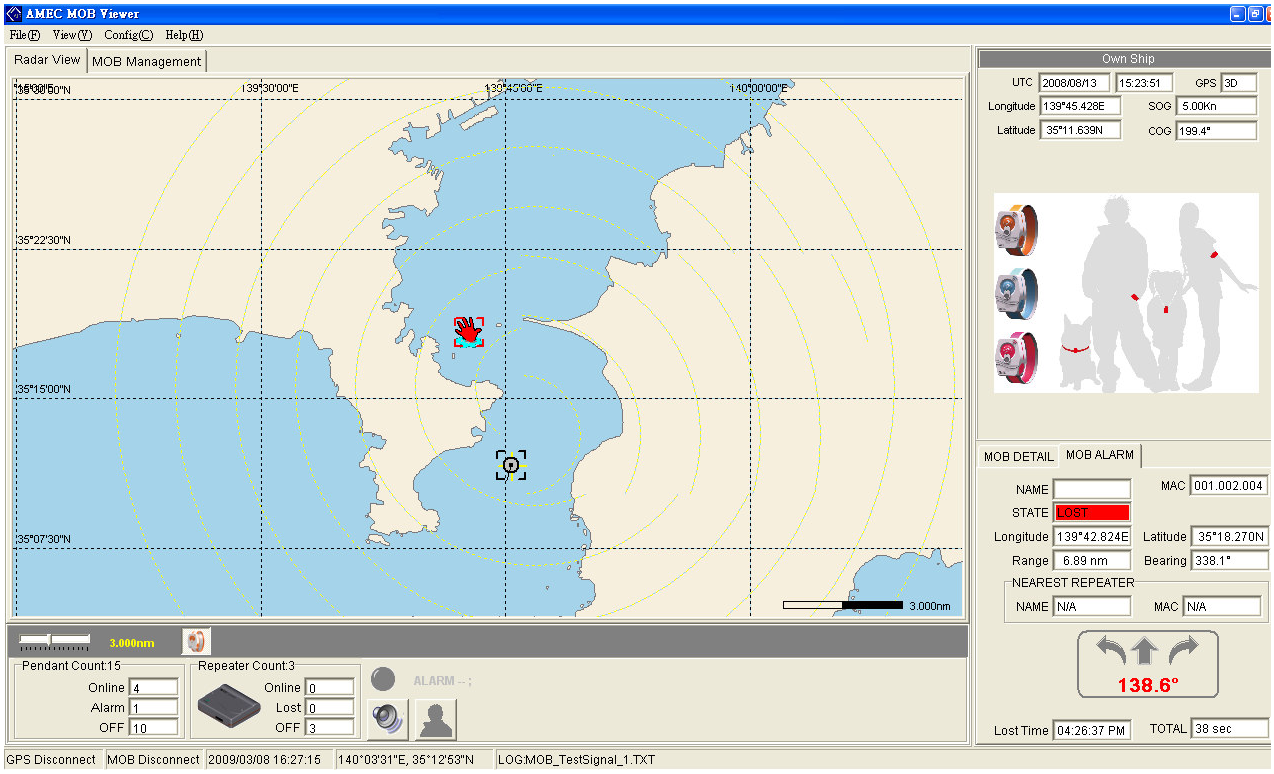
- UTC： Coordinated Universal Time.
- GPS： GPS information.
- Longitude： Longitude of own ship.
- Latitude: Latitude of own ship.
- SOG： Speed Over Ground of own ship.
- COG： Coast Over Ground of own ship.
- Name： Name of the selected pendant user.
- Device ID: ID of the selected device.
- Status： The selected pendant user current status.
- Device Type： The selected device type (ex. Pendant, repeater).
- Zone： The nearest repeater to pendant.
  - Name： Name of repeater.
  - Device ID：ID of selected device.

Zone C:

- Pendant Count：
  - Online：Total amount of the online pendants.
  - Alarm：Total amount of the pendant users in danger.
  - Off：Total amount of the offline pendant.
- Repeater Count：
  - Online：Total amount of the online repeaters.
  - Lost：Total amount of the repeaters lost connections.
  - Off：Total amount of the offline repeaters.

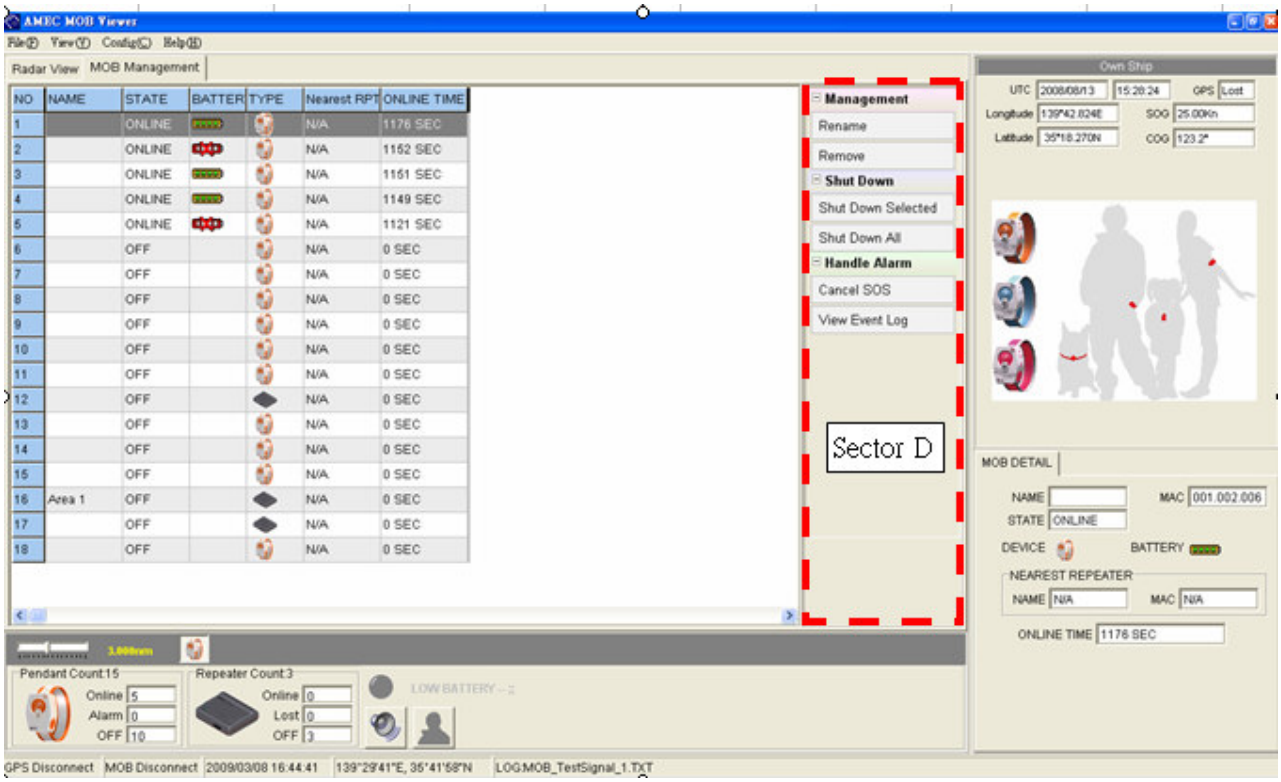
Emergency:

A mark will be positioned in Sector A when a man over-board event happens. The related information of the falling pendant is shown on Sector B, and the reference rescue aid is provided in the lower part of B sector. As below illustrates, the MOB system suggests to turn right 138.6 degree to rescue falling crew member.



MOB MOB Management:

Click the “MOB Management” to enter for knowing further current connection information, such as the pendant user connection status, the pendant battery voltage, or the MOB devices information.

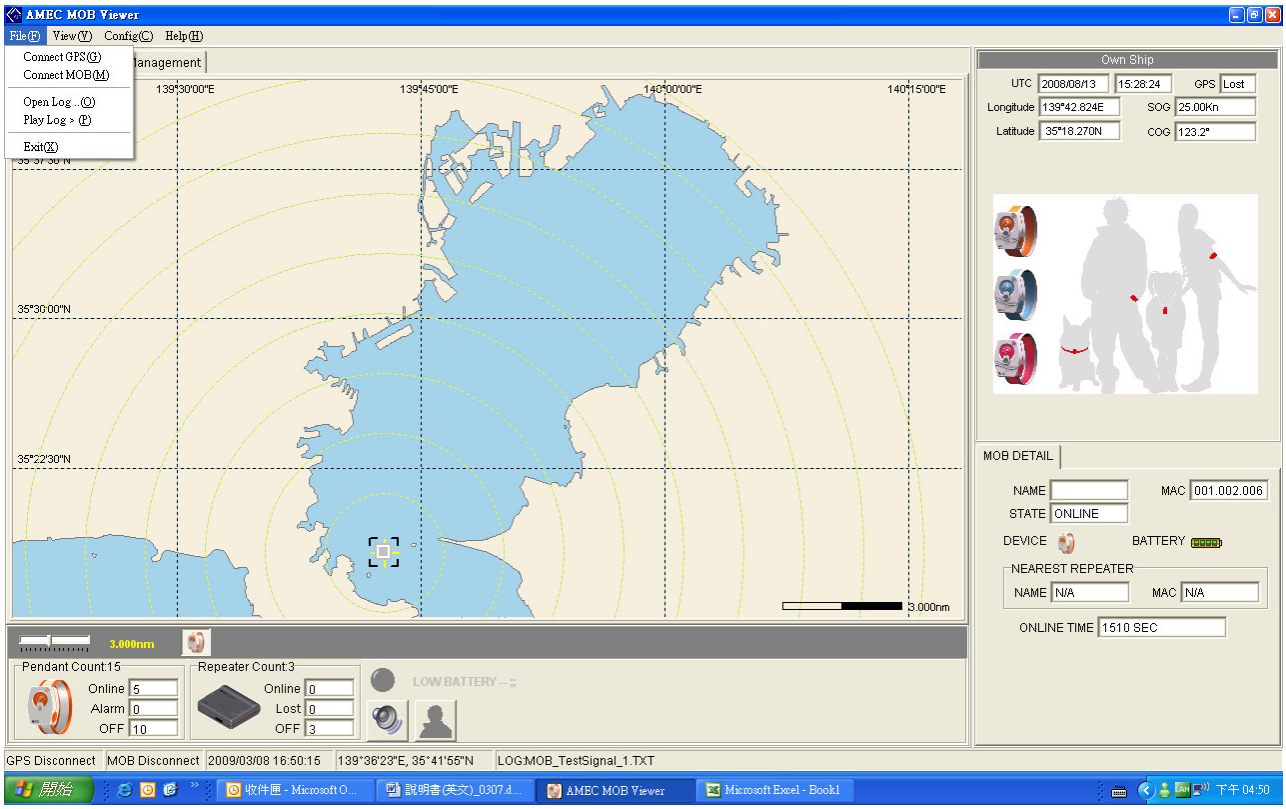


Sector D:

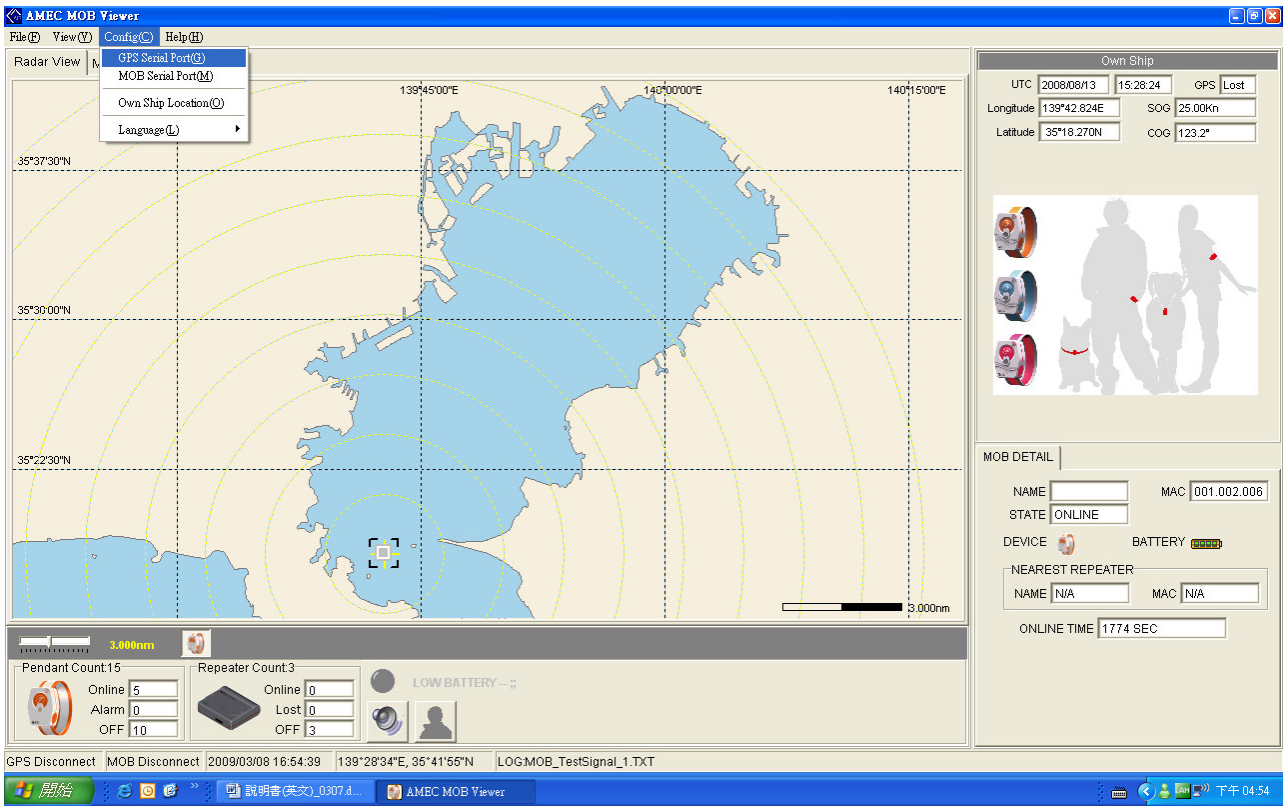
- Management：Device Management:
  - Rename: To re-name the pendant users.
  - Remove: To remove certain or all pendants or repeaters.
- Shut Down:
  - Shutdown Selected: Users may remove certain pendants from management list.
  - Shutdown All: Shut down all pendants and stop monitoring.
- Handle Alarm:
  - Cancel HELP: Click to cancel the request for emergent help and back to normal operation.
  - View Event Logger: Click to open the saved log data.

Menu Bar Main Function: File

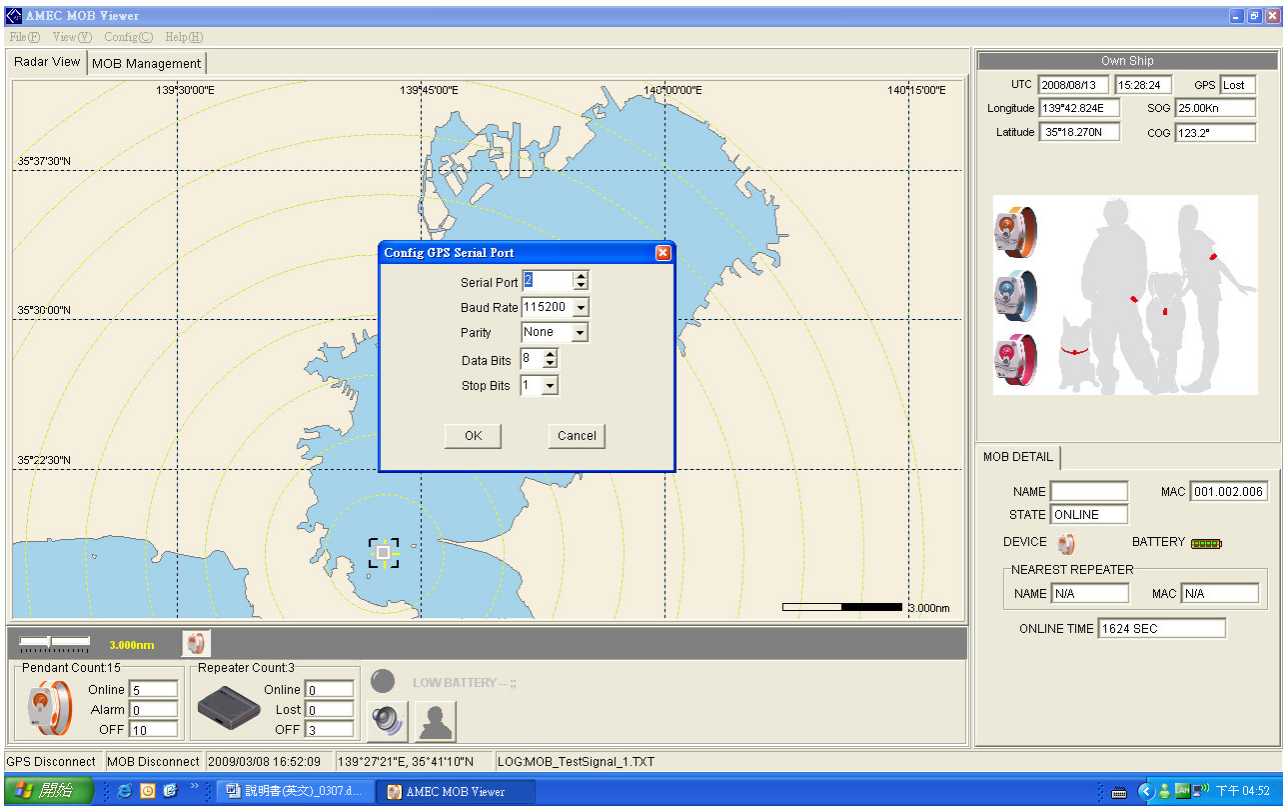
Go to “File” that on the upper left of the menu bar as below picture shown where it offers selection for you to ‘Connect with GPS’ devices or ‘Connect the MOB’ system for building the connection. Also you may click “Open Log” to open the saved data or to “Play Log” to play selected log data. These above mentioned functions can be applicable on the FILE of the menu bar.



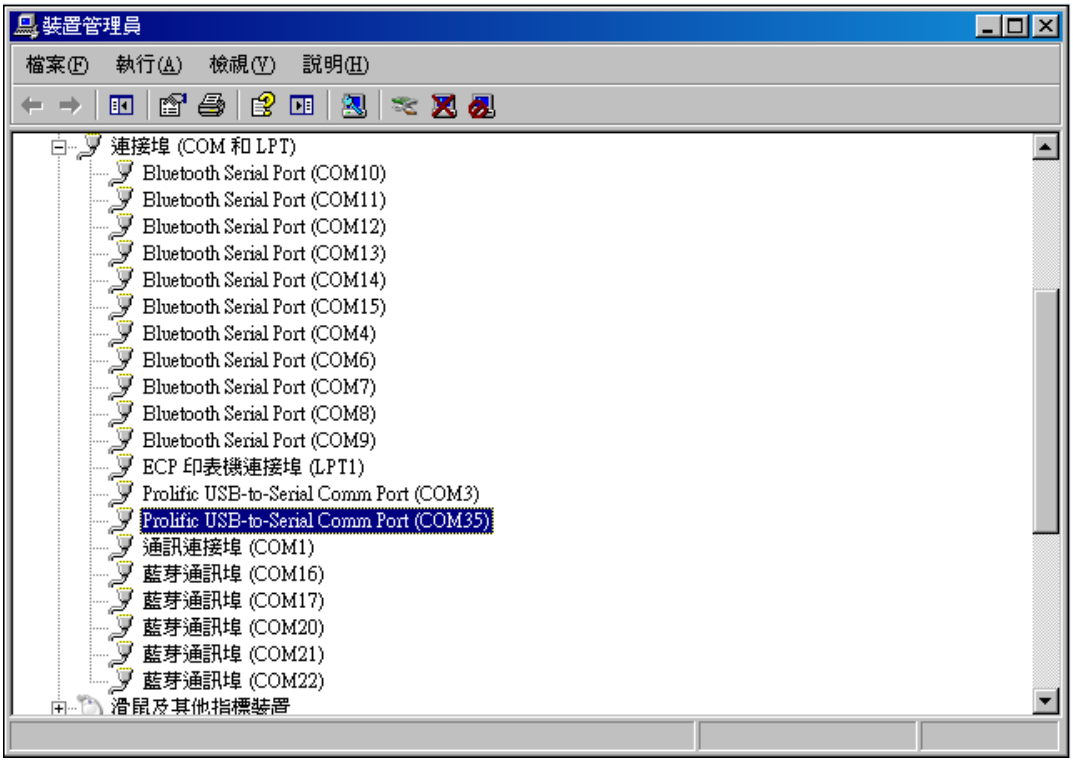
Please click “CONFIG” for GPS serial port setting for external GPS connection. AMEC MOB Dolphin embeds GPS as standard.



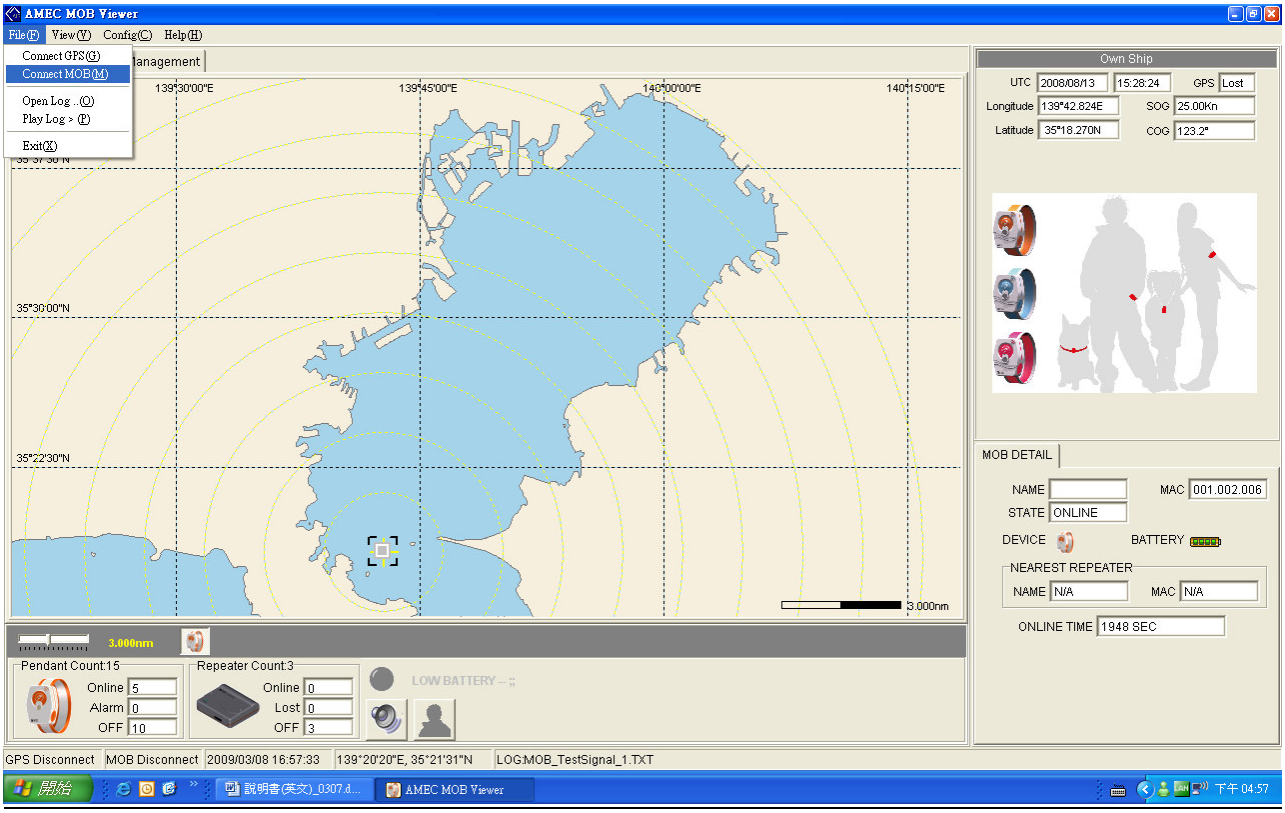
Please click “CONFIG” in the tool bar for MOB serial port setup and a small window would pop out as below picture shown.



Refer to the following steps for checking correct MOB serial port: Please go to Start➔Control panel➔System➔Hardware➔Device manager➔Serial port (COM and LPT), and your own suitable serial port number is shown. Back to the system setup, please select a suitable on the pop out window and set the “Baud Rate” as 115200, then click OK to complete the setting.

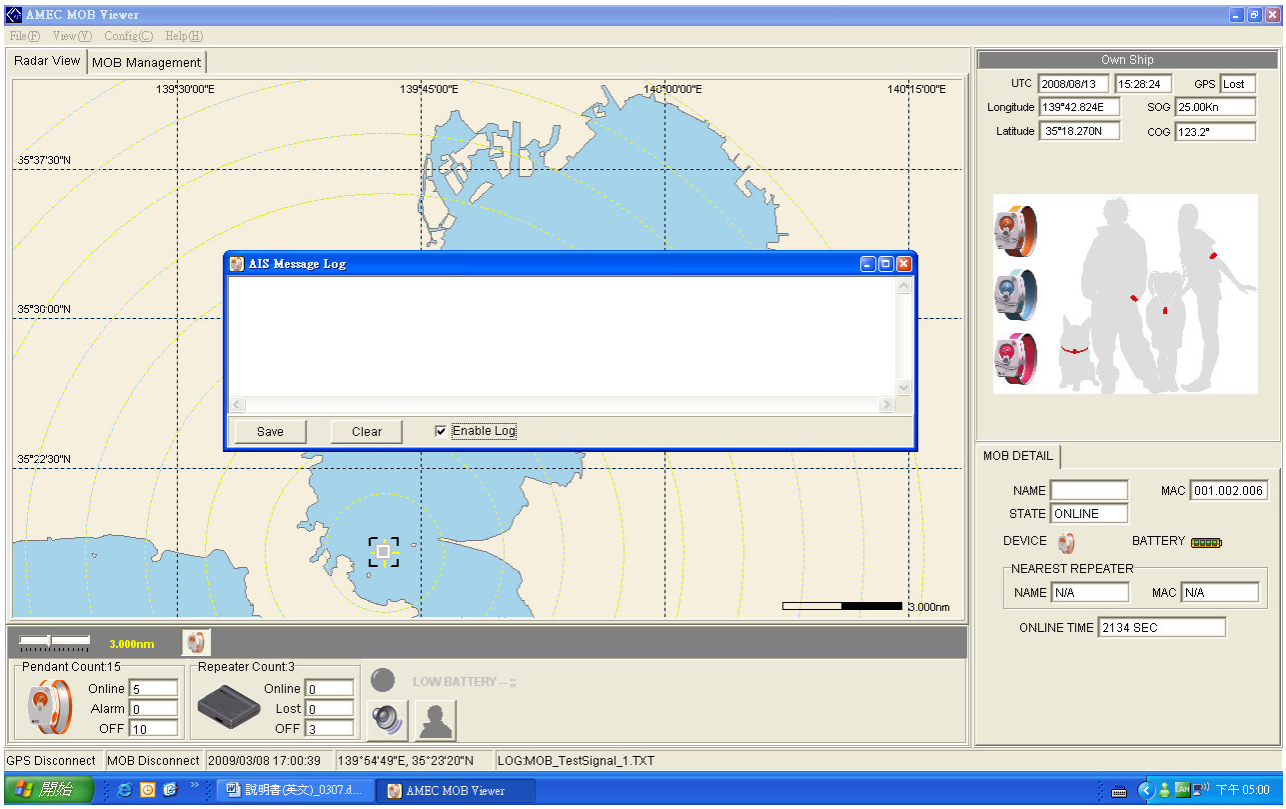


If you have built the connection with PC through MOB cable line, meanwhile please click “File” and choose “Connect MOB(M)” as picture shown below, and MOB system is applicable on PC for monitoring purpose accordingly.



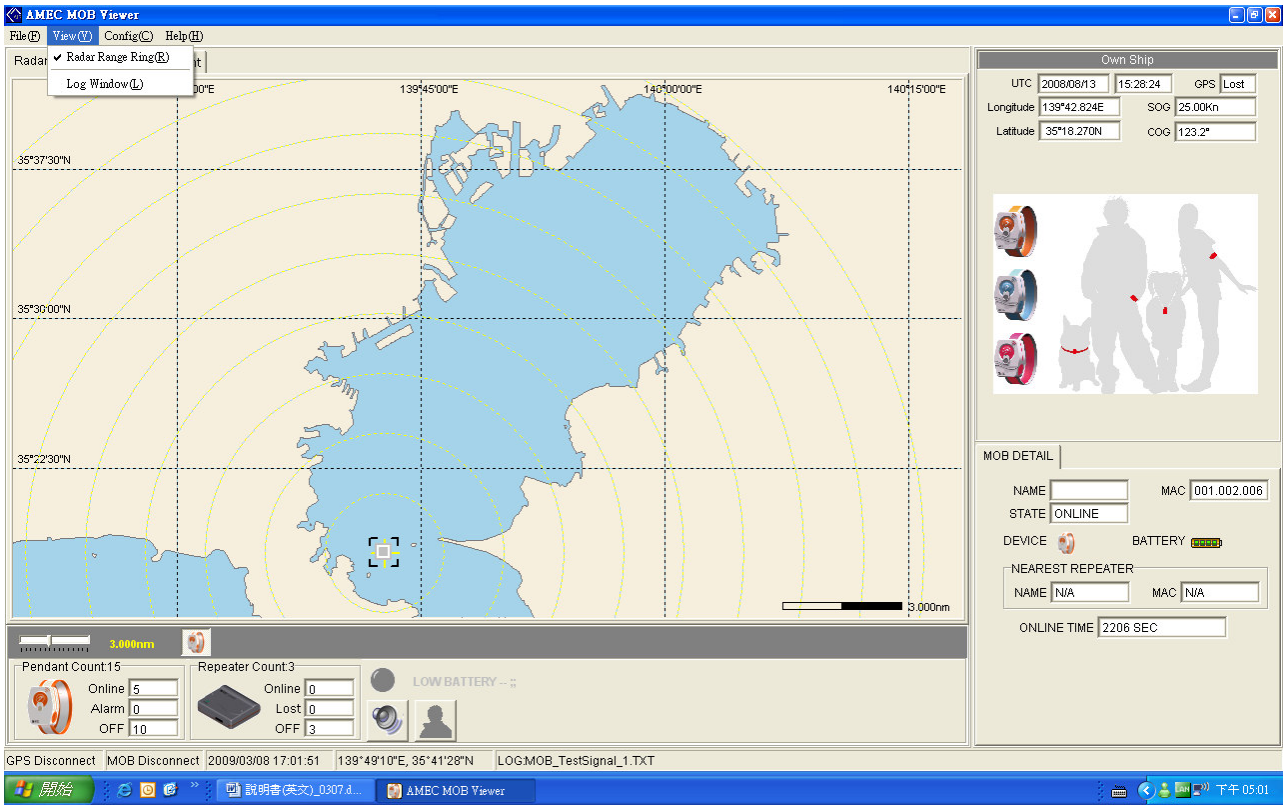
Menu Bar Main Function: Log

To save the data linkage between the GPS and the MOB system, Go to “View” and click on “Log Window (L)” for saving log data. Select “Enable Log” in the pop out window to start the recording and click “save” for data saving. Find saved data in the “File” menu bar for opening or playing log data for own purpose.



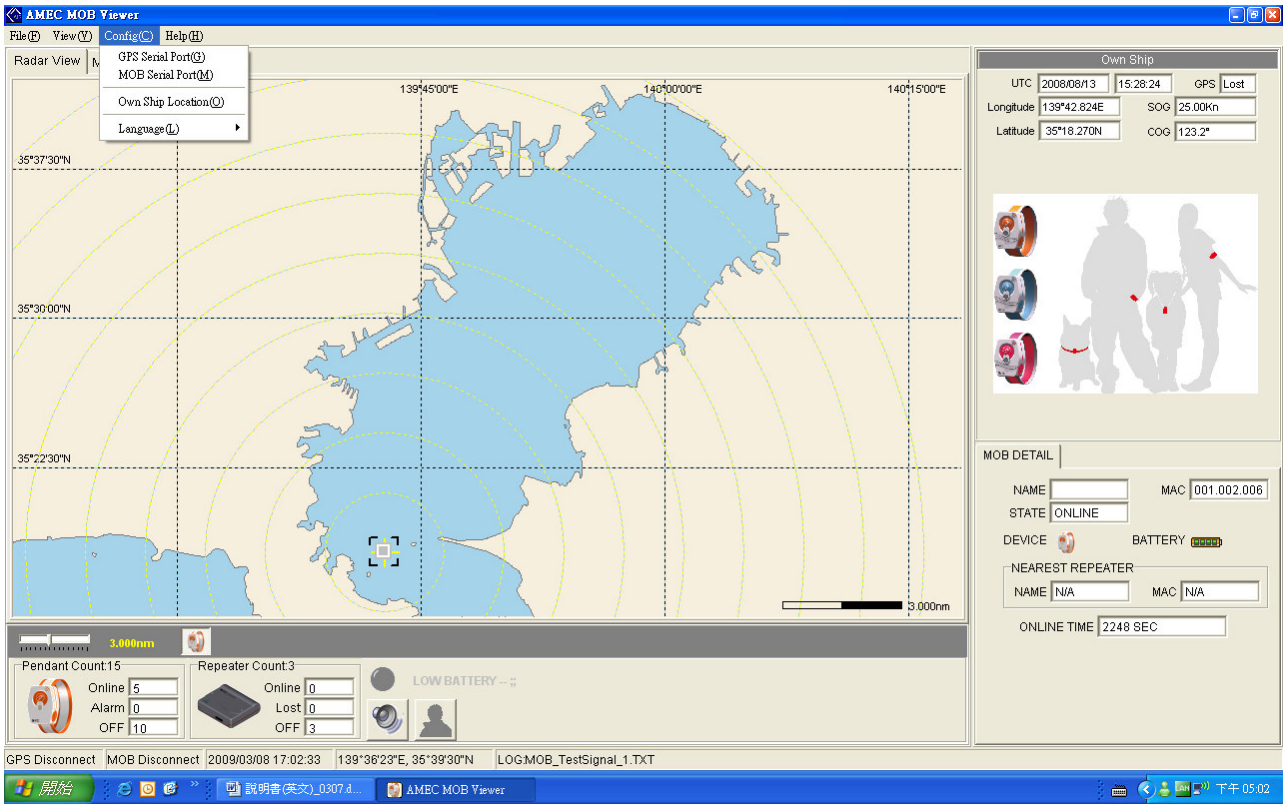
Menu Bar Main Function: View

Please see picture shown below. The “Radar Range Ring” function can be turned on or off for user specific display demand. In addition, the function of saving collected log data can be done in “Log Window (L)” in the selection of the “View” menu bar.



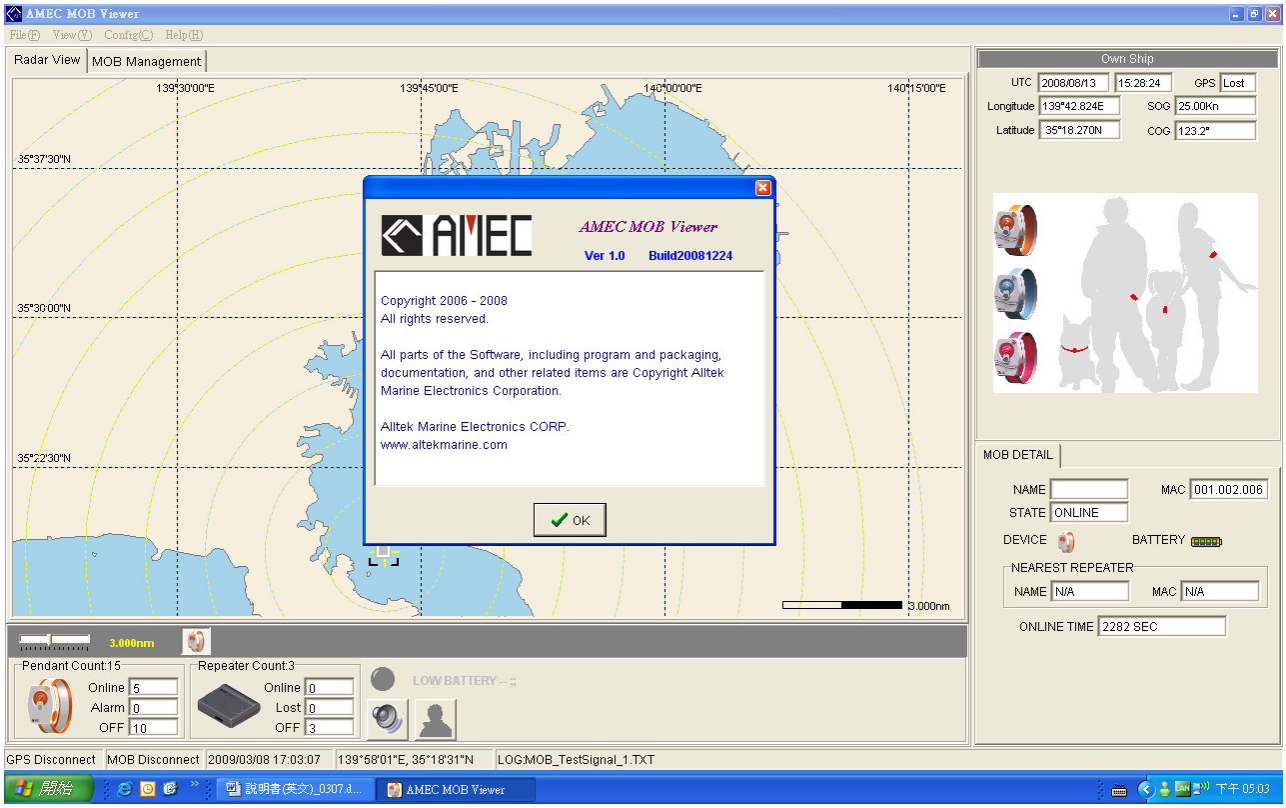
Menu Bar Main Fuction: Config

Click on “CONFIG” in menu bar, the MOB user may start to do the related setting of “GPS serial port” and “MOB serial port”. In addition, once the user has difficulty to receive the GSP signal, the “Own Ship Location” function may be selected for setting as the default value on the radar display to make it centered. The MOB system also provides two language versions (Traditional Chinese and English) for user convenience.



Menu Bar Main Function: About

About AMEC MOB Viewer version.



5. Specification

MOB Standard Package	MOB Controller	MOB Repeater	MOB Pendant
Radio Frequency	2.4GHz	2.4GHz	2.4GHz
RF Transmitter Power	1mW	1mW	1mW
Power Source (DC)	9-30V	9-30V	CR2 Lithium Battery (2000 hrs)
Operating Temperature	-25℃~70℃	-25℃~70℃	-25℃~70℃
Working Temperature	-15℃~55℃	-15℃~55℃	-15℃~55℃
Max. Number of Pendants per System	99	99	N/A
Waterproof	IPX5	IPX5	IPX6
LED Indicator	Red, Blue, Green	Green	High Bean White light LED
Material	High Impact and UV resistant ABS		
Dimension (L x W x H)	109x118x33	109x118x33	59x44x26
Signal Coverage Range	Typically 30m (100ft)		

Trouble Shooting

- When MOB controller function failed where as the pendant is still under normal operating mode, the pendant LED flashes constantly due to signal disconnection. The system monitor shall take immediately action to notify pendant users to remove the battery to prevent constant flashing.

6. CE/FCC Approval

6.1 Federal Communication Commission Interference Statement (temporarily NOT applicable)

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

NCC (台灣適用)

依據低功率電波輻射性電機管理辦法 第十二條 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。 **第十四條** 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

6.2 Declaration of Conformity

Hereby, Alltek Marine Electronics Corp. (AMEC) declares that this MOB controller/pendant/repeater is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Conforms to:

EMC Directive 2004/108/EC and R&TTE

- Directive 1999/5/EC as attested by conformity with the following harmonized standard: ETSI EN 301 489-1VI.6.1 (2005-09)
- Low Voltage Directive 73/23/EEC as attested by conformity with the following harmonized standard: EN60950-I:2001

7. AMEC World Wide Warranty

Limited warranty

Subject to the terms, conditions and limitations set forth in this Worldwide Limited Warranty (hereinafter the "Warranty"), AMEC warrants that its products, when properly installed and used, will be free from defects in material and workmanship for a period of twelve (12) months, from the date of first purchase (the 'Warranty Period')

For the purposes of this warranty, 'date of first purchase' means the date that the product was purchased by the first retail customer, or by the institutional customer, or in the case of a product installed on a new vessel or any other marine related platform by a certified AMEC original equipment manufacturer (a 'AMEC OEM'), the date that such vessel was purchased by the first retail customer.

AMEC will, at its sole option, repair or replace any defective products or components returned during the Warranty Period in accordance with the terms, conditions and limitations set forth below. **Such repairs or replacement will be the sole remedy of the customer under this Warranty.**

Standard Warranty Service

To qualify for standard warranty service the product must be returned to a AMEC-certified service agent (i) within the Warranty Period, and (ii) within thirty (30) days of the alleged product failure. Any products returned must be securely packaged and sent pre-paid and insured to AMEC or to a AMEC-certified service agent. All products returned must be accompanied by a copy of the original sales receipt to be eligible for standard warranty service.

Obtaining Warranty Service

A list of AMEC-certified service agents is available from AMEC Technical Support at **www.alltekmarine.com**

Other conditions

This Warranty is fully transferable provided that you furnish the original proof of purchase to the AMEC -certified service agent. This Warranty is void if the label bearing the serial number has been removed or defaced.

Limitation and Exclusions

In addition to any other limitations and exclusions set forth herein, AMEC is not responsible for, and this Warranty does not cover:

- Failure due to abuse, misuse, accident, unauthorized alteration, modification or repair, improper installation or operation (whether or not by a AMEC-certified service agent) or improper storage, shipping damage or corrosion;
- Costs associated with routine system checkouts, alignment/calibration, seatrials or commissioning;
- Defects or damage that result from the use of non-AMEC branded or certified products, accessories or other peripheral equipment, including without limitation housings, parts, or software;
- Aftermarket software (i.e. all software other than the original operating software sold with the products);

- Products that have been refurbished, reconditioned, or remanufactured (The foregoing does not apply to products repaired or replaced pursuant to the terms of this Warranty).

- Products that have been dismantled resulting in the broken label on the Products;
- costs associated with overtime or premium labor costs;
- differences in material, coloring or size that may exist between actual products and the pictures or descriptions of such products in our advertising, advertising literature or on the Internet;

TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE FOREGOING WARRANTY IS AMEC'S SOLE WARRANTY AND IS APPLICABLE ONLY TO NEW PRODUCTS PURCHASED WORLDWIDE. THE PROVISIONS OF THIS WARRANTY ARE IN LIEU OF ANY OTHER WRITTEN WARRANTY, WHETHER EXPRESSED OR IMPLIED, WRITTEN OR ORAL, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.