„vmsTRACK" – Transponder

„vmsTRACK-PRO" - Transponder

Manual

vmsTRACK / vmTRACK-PRO

Maritime Locating System

Product No.: A138 / A130 / A193-CS

Rev. 2.0

Weatherdock AG, Germany

PLEASE READ THIS FIRST!

Safety Precautions

The vmsTRACK(-PRO) transponder contains Li-Ion batteries. When the device is used at temperatures outside the limits of -20°C and +55°C, the useful battery capacity is reduced. Keep the device away from hot environments, because at temperatures of more than +70°C the batteries inside the vmsTRACK(-PRO) could cause damage. Li-Ion batteries shall be given to the recycling process and should not be given to the home garbage. The vmsTRACK(-PRO) produces electromagnetic fields, which could interfere medical devices. For safety reasons store this device so that children cannot reach it. The manufacturer is not responsible for damages or failures that are caused by the vmsTRACK(-PRO), damaged battery pack or misuse by the

user. Use this device only together with certified equipment. Other equipment could damage the vmsTRACK(-PRO). Clean this device with a clean, dry and soft blanket. Do not use aggressive or acid liquids and chemicals for cleaning. Do not open the device on your own. Unpermitted opening of the vmsTRACK(-PRO) could damage the device and the warranty is lost.

LICENSING

IMPORTANT:

In most countries the operation of a VHF unit using the marine band is included under the vessels marine VHF license provisions. Please contact the relevant authority in your country for more information. In accordance with a policy of continual development and product improvement the vmsTRACK(-PRO) hardware and software may be upgraded from time to time and future versions of the vmsTRACK(-PRO) may therefore not correspond exactly with this manual. When necessary upgrades to the product

will be accompanied by updates or addenda to this manual. Please take time to read this manual carefully and to understand its contents fully so that you can install and operate your system correctly.

Information contained in this manual is liable to change without notice. Weatherdock AG, disclaims any liability for consequences arising from omissions or inaccuracies in this manual and any other documentation provided with this product.

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ATTENTION:

PLEASE USE THE VMSTRACK(-PRO) CAREFULLY AND NOT UNINTENDED.

ALSO THE VMSTRACK(-PRO) WILL NOT OPERATE AUTOMATICALLY.

IT MUST BE INITIALISED BY THE USER I

N CASE OF EMERGENCY

DIRECTORY

Revision of the operation manual

Rev. 1.0 Author: Jürgen Zimmermann, 08. February 2012

Rev. 1.1 Author: Michael Knipp, 20. September 2012

Rev. 1.2 Author: Michael Knipp, 19. April 2013

Rev. 1.3 Author: Jürgen Zimmermann, 20. April 2013

Rev. 1.4 Author: Alfred Kotouczek, 21. June 2013

Rev. 1.5 Author: Jürgen Zimmermann, 12. July 2013

Rev. 1.6 Author: Jürgen Zimmermann, 22. August 2013

Rev. 1.7 Author: Jürgen Zimmermann, 10. February 2014

Rev. 1.8 Author: Jürgen Zimmermann, 08. July 2014

Rev. 1.9 Author: Jürgen Zimmermann, 04. Sept. 2014

Rev. 2.0 Author: Jürgen Zimmermann, 12. Feb. 2016

C0ngratulations!

Thanks to purchase a unit from Weatherdock AG in cooperation with Weatherdock AG. This testifies your high technical competence.

1. SHORT DESCRIPTION

Figure 1

The vmsTRACK(-PRO) is a portable battery or wire powered VHF-Position transmitter with an integrated GPS-receiver. The device is intended for the use in locating operations. The vmsTRACK(-PRO) operates as a VHF-Transmitter and it can be activated in two situations by pressing two different buttons:

(A) Normal operation (transmitting dynamic and static data to receiving stations).

(B) Alerting in case of emergency.

The range depends on the height of the transmitters' antenna over sea level. The range is approx. 10-15 nautical miles, if the height of vmsTRACK(-PRO)'s antenna 1 m and up above sea level assumed that the receiving antenna is at a height of 5 m and up (ship's VHF antenna). The Li-Ion battery pack provides a capacity that ensures an operation time of more than 120 h, when activated.

This device maintains water tightness down to 10 m depth, not unduly affected by seawater or oil and is resistant to sunlight. It withstands drops from a height of 20 m into water.

The Li-Ion batteries can be recharged easily using the charging station that can be purchased by an authorized distributor.

2. ACTIVATORS AND INDICATORS

Figure 2

2.1. Activating elements

2.1.1. Button "ON"

Pressing the button „ON“ the vmsTRACK(-PRO) enters the Normal Operation mode.

2.1.2. Button "ALERT"

With the button "ALERT“, the device can be activated in case of emergency. The button is covered by a slider to prevent false alarms.

2.2. Indicators

2.2.1. GPS LED

The green LED, with the marking „GPS“, is blinking, when the device receives GPS signals and is able to get a position fix. If the GPS LED does not blink, there is no GPS reception possible.

2.2.2. ON LED

The yellow LED, with the marking „ON", is blinking, when the vmsTRACK(-PRO) is activated in case of Normal Operation mode.

This LED gives also information about the battery status. Regular flashing shows battery full. Double flash means the battery is half full. Three times flashing shows that battery is running empty.

In charging mode (i.e. the unit was turned off before) the yellow LED is illuminated continuously during charging period.

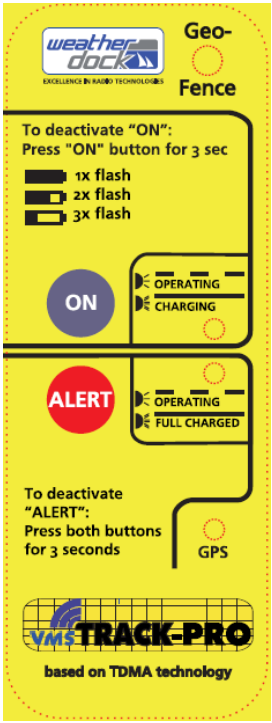
2.2.3. ALERT LED

The green LED with the marking "ALERT" is blinking, when the vmsTRACK(-PRO) is in alert mode.

In charging mode this LED is illuminated continuously when the battery is full charged.

2.2.4. Geo-Fence LED

The white LED is flashing, when the vmsTRACK(-PRO) has entered a Geo-Fence region. By that flashing LED, the captain is informed and advised to leave that region until the LED turns off.



3. OPERATION INSTRUCTION

3.1. Activation "ON"

Figure 4

- Press the button „ON“until the yellow LED is on.

- The yellow LED starts flashing every 2 seconds. As soon as a GPS position is available the GPS-LED start flashing too. The vmsTRACK(-PRO) transmits a burst of eight VHF messages. When the vessel has moved 2 nautical miles or every 60 seconds (or other interval time), another burst is transmitted.
  If there is no GPS positions fix available, the device transmits the last known position.

- In case that the vmsTRACK(-PRO) detects manipulation (tamper), the unit will transmit every 60 sec, until the tamper situation has disappeared.

- With the vmsTRACK(-PRO) VHF receiver connected to a chart plotter or laptop with navigational software you can check the transmission of the

vmsTRACK(-PRO). Normally the chart plotter or navigational software shows a ship symbol on the display. The information of the unit ID (9 characters) is shown together with the device name and destination.

- Following information is send out:

  - ***Unit-ID**: (9 digits)*
  - ***Position** : Latitude & Longitude with a resolution of 1/10.000 of a minute,*
  - ***Speed over ground (SOG)**,*
  - ***Course over ground (COG),***
  - ***Vessels / Captains name**: (20 characters)*
  - ***Vessels / Captains destination or area of***

	Special Manoeuvre		Spare		
AIS-P Message No. 1	Bit 1	Bit 2	Bit 1	Bit 2	Bit 3
GPS Tamper	1				
Power Tamper		1			
Bracket Tamper			1		
Manual Alert				1	
Geo-Fencing Alert					1

[For Msg. 18 (CS) the tamper bits are inserted in the five MBS bits of the "Reserved for regional or local applications".]

Figure 3 Tamper- and Alert-Sources

- The bright white LED starts flashing, when the vessel is entering a geo-fenced area. The captain is advised to leave this area.

- To deactivate "ON" please press the "ON" button for three seconds, until all LED's are off.

3.2. Activation "ALERT"

Figure 4

- Shift the slider down (green arrow) and,

- Press the button “ALERT” until the green LED is on. Then take care that the vmsTRACK(-PRO) has got line of sight to the sky. This ensures best GPS

reception conditions.

- The ALERT-LED starts flashing every 2 seconds. As soon as a GPS position is available the GPS-LED starts flashing too. The vmsTRACK(-PRO) starts transmitting a position report every 60 seconds.
  If the unit loses a GPS position fix, then the GPS-LED stops flashing but the vmsTRACK(-PRO) will transmit the last known position.

- The VHF message 1 or 18 have set the "Manual Alert" bit, see Figure 3.

- The ALERT-mode can be terminated by pressing both buttons for more than 3 seconds. The device enters the normal operation mode ("ON").

- The vmsTRACK(-PRO) works default on proprietary VHF frequencies (not international AIS frequencies). But the unit can be configured to operate as an AIS-SART instead (see Programming section). Then it uses the AIS frequencies!

4. BRACKET

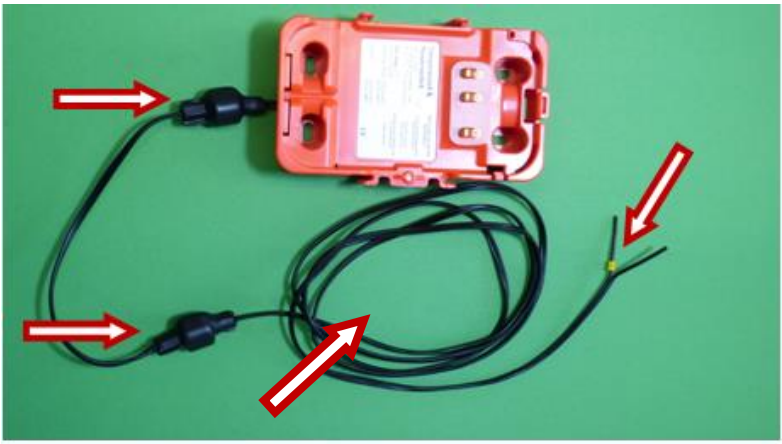
The “Tamperproof and power” bracket A122 is used for both, tamper detection and connecting to a DC power supply. The other type of bracket A121 has got no tamperproof function. The bracket has got a 3 meter black cable harness which can be connected to the power supply.

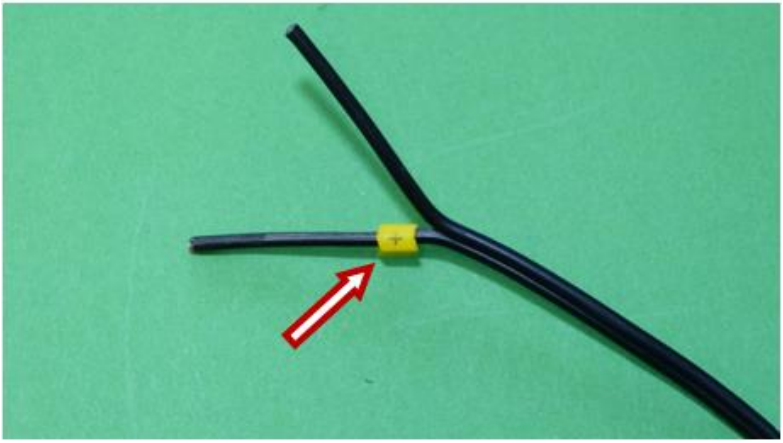
As you can see on the pictures below, with the cable there are two small ferrite units. Just to make sure that the VHF signal power does not interfere the vessels power supply.

That ensures best possible transmission.

The positive pole of the cable harness is marked with a little yellow ring to avoid a mix-up in connection.

Please do not remove the silicon pad from the vmsTRACK(-PRO). It’s for protecting the electrical contacts against saltwater.

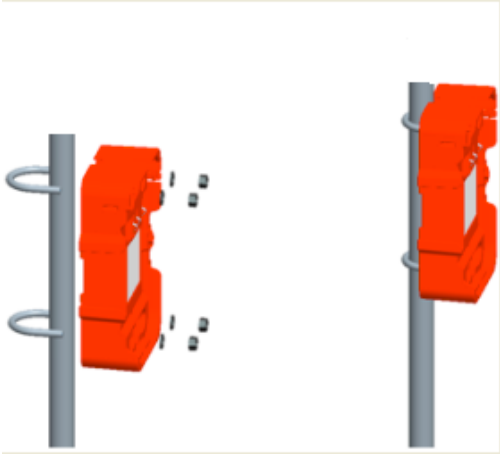


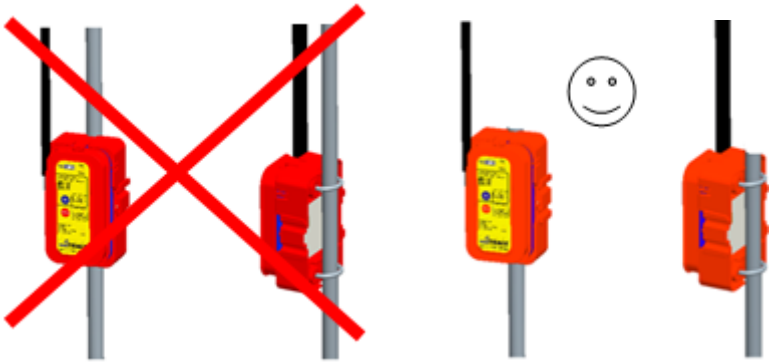


6. INSTALLATION TIPS

To insert the vmsTRACK(-PRO) into the bracket, you can see it in pictures below.

In the next pictures and sketches you can see how to mount these devices on a pole or at a wall:





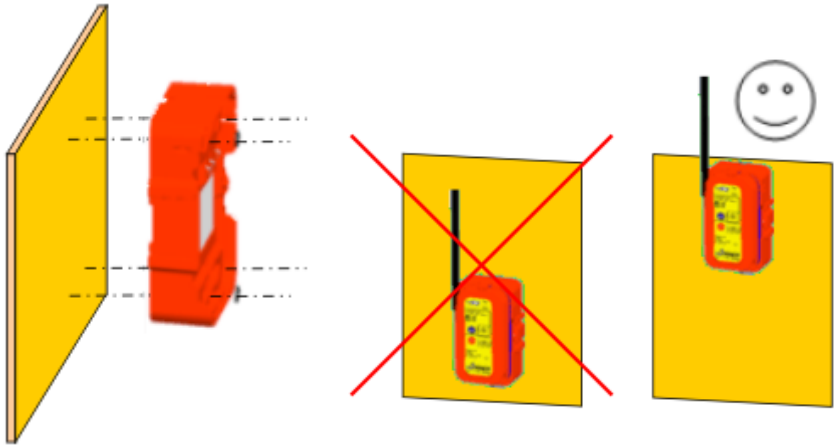
ATTENTION: Do not have a metal pole close to the antenna (left figure). This would significantly reduce the radiated power of the VHF signal.

The right figure is perfect.

There are 4 holes, which are used for screwing the bracket onto a wall.

This wall can be a wooden or plastic wall. In case of a metal wall, you have to consider the antenna position. The antenna must not be infront of a metal wall. The vmsTRACK(-PRO) should be placed as high as possible, so

that the antenna comes higher than the top of the wall (see figure below):



With the metal stick, which is delivered with every vmsTRACK(-PRO), you can additionally secure the unit. Push the stick completely into the whole. The unit is fixed tightly with the bracket. This can be used as a mechanical tamper proof. Once the stick is in, you cannot pull out the

vmsTRACK(-PRO) without destroying the bracket or vmsTRACK(-PRO); so be careful using the stick.

7. CHARGING THE BATTERIES

The vmsTRACK(-PRO) can optionally be recharged in the Power-Bracket A121, if you have got no power supply on board.

Inside the vmsTRACK(-PRO) there are Li-Ion batteries, which have got a capacity of around 120 h operation time. These batteries are high quality batteries with very low self discharge. So you can store the fully charged vmsTRACK(-PRO) for more than three month without a significant loss in capacity.

Place the vmsTRACK(-PRO) into the Battery-Charger. The battery charger must be connected to DC power supply (12 or 24 VDC, 2 A).

You can charge the unit in any mode. When the unit is off, the LEDs will show the charging status. If the yellow LED is continuously on, the batteries will be charged. When the green LED is continuously on, the batteries are fully charged.

In Normal Operating mode (unit is transmitting) the “ON” LED or "ALERT LED" is blinking every 2 seconds. So you can see the unit is operating.
During this mode the batteries will be charged, too. The batteries will be kept full charged as long as the DC power supply is connected.

For more information, see also section: 9.8.

8. PROGRAMMING

The vmsTRACK(-PRO) can be programmed with information, which is included in the VHF messages and different settings.

The Unit-ID is a 9-digit figure like the MMSI, known from the AIS system. It is a unique number pre-programmed by the manufacturer or administrator.

In order to program the vmsTRACK(-PRO) you need the USB-Programmer device A124, which can be purchased from your distributor.

The USB-cable shall be connected to a PC or laptop.

With the Programmer device comes a CD-ROM with the installation software for the PC.

Insert the CD-ROM into your PC or Laptop and start the setup program.

On the Windows-Desktop you will see the icon of the vmsTRACK(-PRO) programming software.

When you double-click that icon you will be asked to select a country, then following program window will open:

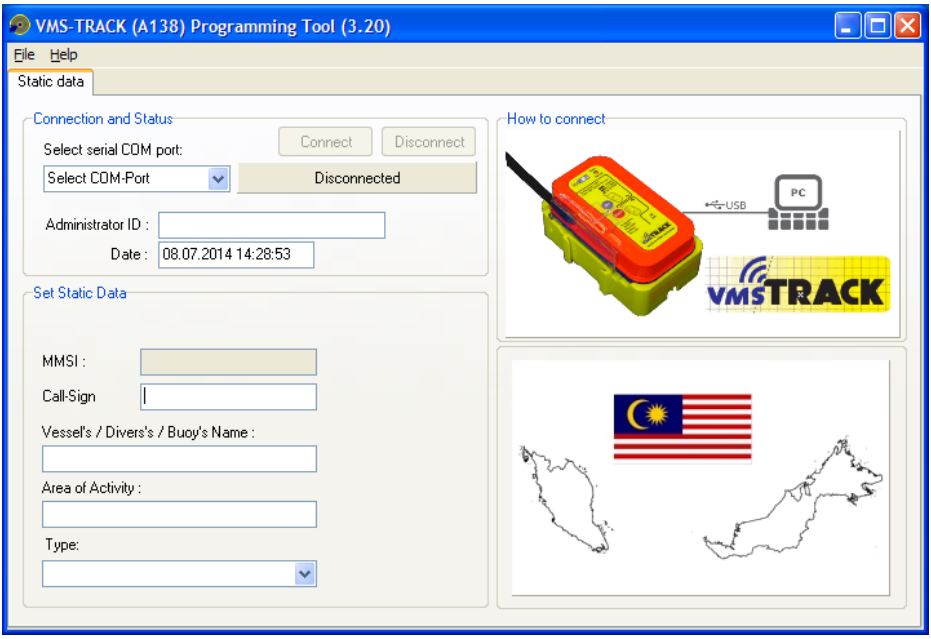
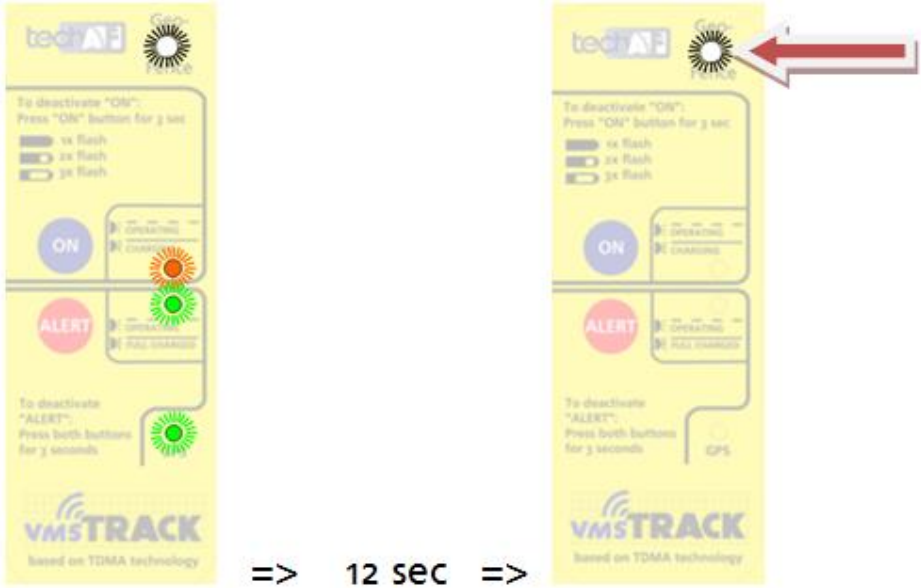


Figure 5

Now you have to insert the vmsTRACK(-PRO) into the Programmer. The vmsTRACK(-PRO) will turn on immediately.

You have to wait ca. 8-12 sec seconds until the white LED is turned on only!



When the white LED is on, go to the next step in the PC software and select the right COM-Port and press "Connect". After that the following picture will occur:

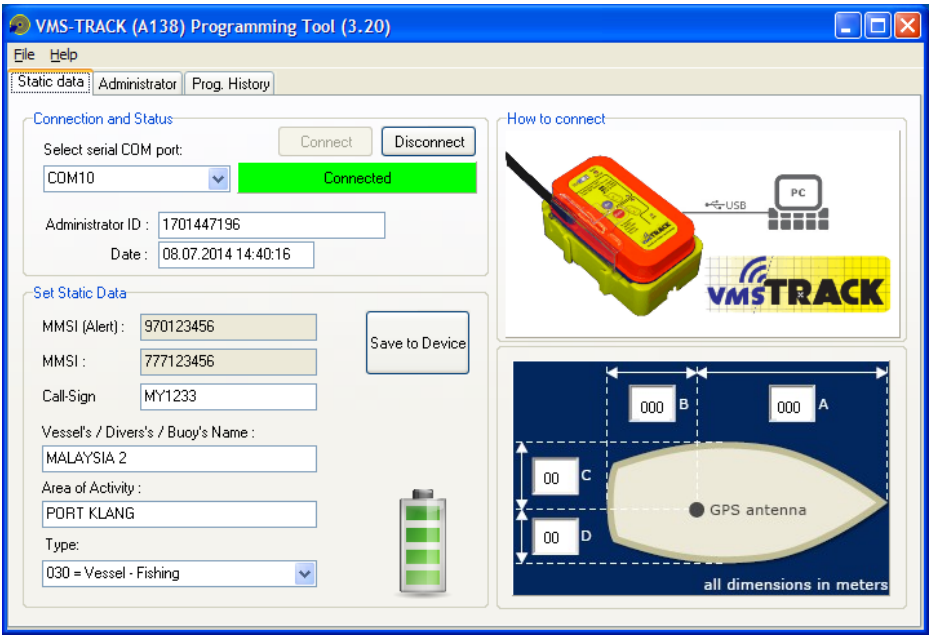


Figure 6

The contents shown above are just an example. The vessel's name and the area of activity can be entered or changed. The MMSI is pre-programmed and cannot be changed. The status of the rechargeable battery is also shown on this tab-sheet.

When you are administrator, then you have got a blue dongle (B084), which has to be inserted into a USB port.

Figure 7 (Administrator - Dongle)

Then you do have special rights in order to change other settings of the vmsTRACK(-PRO), which are explained in the following chapter. The "Administrator ID" is the serial number of the dongle.

9. ADMINISTRATOR SETTINGS

Following settings can only be done by the manufacturer or the administrator and cannot be changed by the end-user.

If you have inserted the dongle (see Figure 7), then you will see the hidden page called “Administrator”

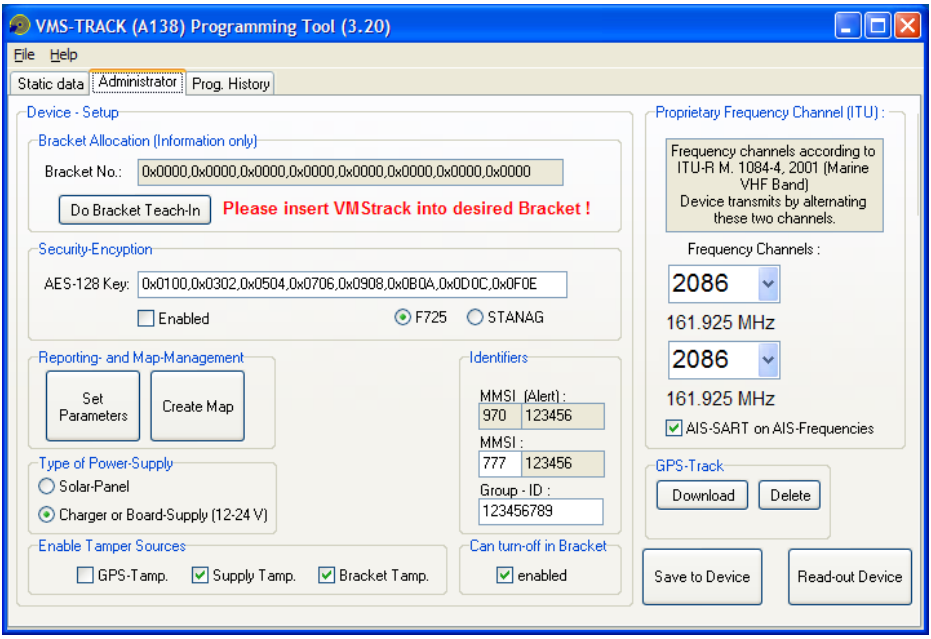


Figure 8

9.1. Set Identifiers

The administrator can change the the MMSI, except the first three figures of the Alert MMSI, which is the AIS-SART MID = “970”. The following 6 figures are the serial number of the device.

9.2. Frequency Setting

On the right side you can change the frequency the vmsTRACK(-PRO) is sending. The frequency must be applied at the local authority (of the country). You can select two different or two same frequencies. When choosing two frequencies, the vmsTRACK(-PRO) is alternating its transmissions on these channels.
The frequency the vmsTRACK(-PRO) should be equal to the frequencies of the receiving station.

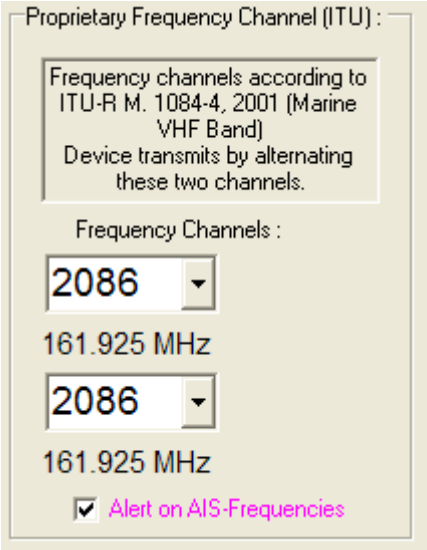


Figure 9

Be aware, that the selected frequencies have also to be set in the receiver; otherwise you won't see the vmsTRACK(-PRO) on the electronic chart display.
If the checkbox "Alert on AIS-Frequencies" is selected, then the device will send as an AIS-SART (Search-and-Rescue-Transmitter) on AIS to ship and shore stations nearby. In that case the MMSI starts with "970", which indicates, that this is an AIS-SART!

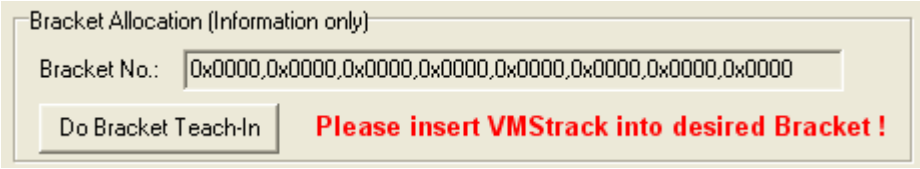
9.3. Bracket Tamper

The Bracket Tamper function checks if somebody is manipulating the unit. When somebody removes the vmsTRACK(-PRO) from the bracket, the vmsTRACK(-PRO) detects that and sends out an alerting message to the shore station.

To pair the vmsTRACK(-PRO) with a bracket, you have to aquire the right AES-128 key. Every bracket has got its individual key.

The pairing of vmsTRACK(-PRO) with the bracket is done only once at the beginning of the installation.

The factory delivery state shows the following:



The Bracket No. is set to an initial value (zero “O”). Now you have to insert the vmsTRACK(-PRO) into the desired bracket and press on the “ON” button to start the unit. The unit starts flashing the yellow LED. Since successful pairing the white LED flashes three times. Now the vmsTRACK(-PRO) is in normal operation mode. With that bracket the vmsTRACK(-PRO) generates always different

hopping codes. So there is no repeating code sequence, which makes a hacker attack impossible.

Whenever the user removes the vmsTRACK(-PRO) from the bracket or uses another bracket, a tamper is detected and transmitted through the VHF channel.

If a vmsTRACK(-PRO) is already paired you see the following figure:

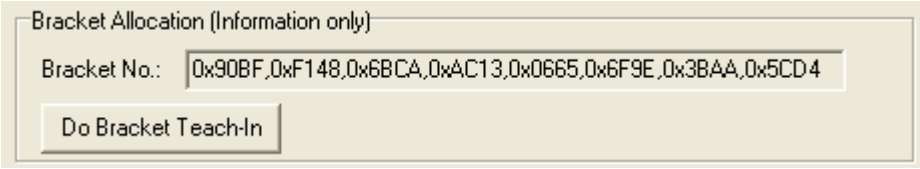
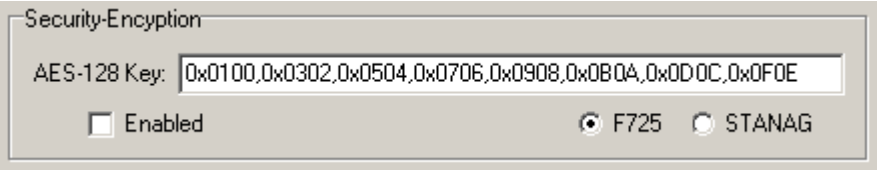


Figure 10 (Bracket No. is always different)

If the bracket or the vmsTRACK(-PRO) has to be exchanged for some reason (hardware defect), Administrator can restart pairing by pressing on the button “Do Bracket Teach-In”.

9.5. Security-Encryption

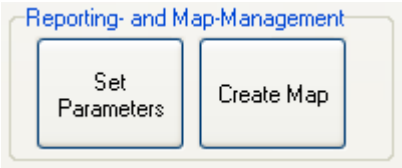


The Administrator is able to enable or disable VHF message security-encryption. If encrypted, a standard VHF receiver is not able to get the message information. The encrypted targets are not shown on the chart-plotter.
The encryption is done with an AES-128 Bit key, which can be programmed here. *[It has to be entered with the LSW-first (low significant word (=16 Bit) first.]*
There are two types of encryption F725 and STANAG.
The F725 method allows the receiver to decrypt the message and to generate a standard AIS-Msg. out of it.
The STANAG encrypted message must be decrypted by the software which is evaluating the message contents and doing the display of the targets.

9.6. Map and Geofencing

The vmsTRACK(-PRO) has the ability of checking its GPS position against geo-regions, which are stored in the vmsTRACK(-PRO) memory.

Geo-regions can be rectangular shapes, circular shapes or the contour of the Malaysian coast line.



For selecting the behaviour of the vmsTRACK(-PRO) within the various geo-regions please press on the button “Set Parameters”:

9.6.1. Set Parameters

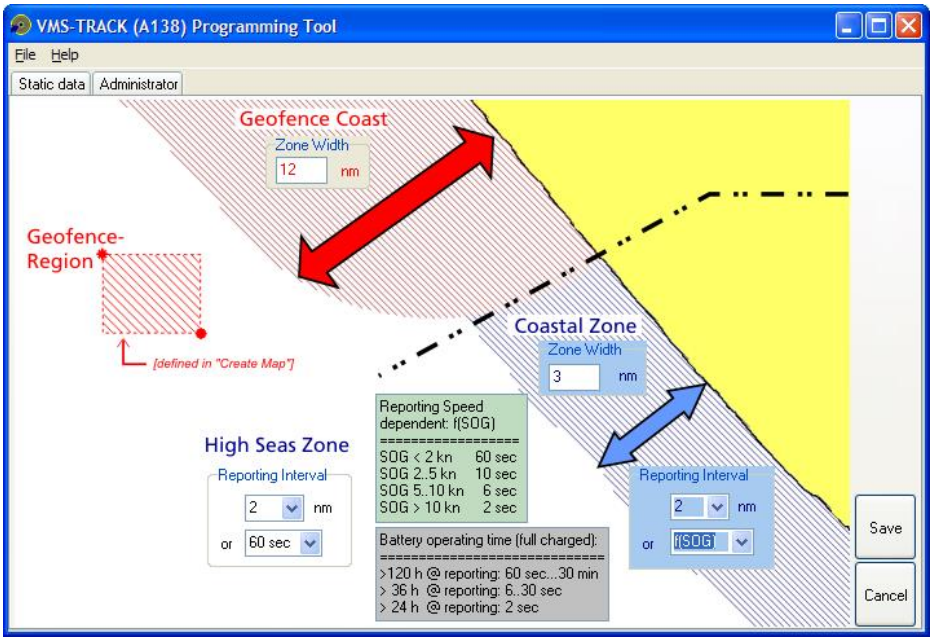


Figure 11

The Map- and Geo-Fencing Management supervises special regions, which are stored in the vmsTRACK(-PRO)'s memory. Whenever the vmsTRACK(-PRO) (i.e. the vessel) enters such a geo-fence region (red areas), the vmsTRACK(-PRO) will alert the captain by flashing the

bright white LED on the top. This is useful for defining regions, where for example fishing is not allowed.
In case of a geo-fence alert the vmsTRACK(-PRO) will also send out an alert message to the shore station.
How to define the Geofence regions please see the chapter "Create Maps".
In this tab-sheet you can change the zone width of the geo-regions and you can define the individual reporting intervals.

- Geofence Coast

  Here you can change the width of the zone (counted from the coast-line).When the vmsTRACK(-PRO) enters this zone, the geofence-alert (white LED starts flashing) is active and a VHF message is send out with the tamper alert bit set.

- Coastal Zone

  This is the coast-line of your homeland. You can also

change the width of this zone. When the vmsTRACK(-PRO) enters this region the reporting interval changes to the defined parameters [60 sec up to 30 min][1]. In Figure 11 (example) the reporting of the VHF messages will be every 1 nautical mile or with a speed dependent rate f(SOG) (see green table).

- High Seas Zone

  Outside coastal zone, the ship is assumed to be on high sea. The reporting interval is set to the defined interval [60 sec up to 30 min][1]. In Figure 11 (example) it is 2 nautical miles or 30 minutes.

[1] For A138 the interval can be reduced down to 2 sec (e.g. regattas).

If you do not want any difference between high seas and coastal zone, you just set the reporting interval to the same values.

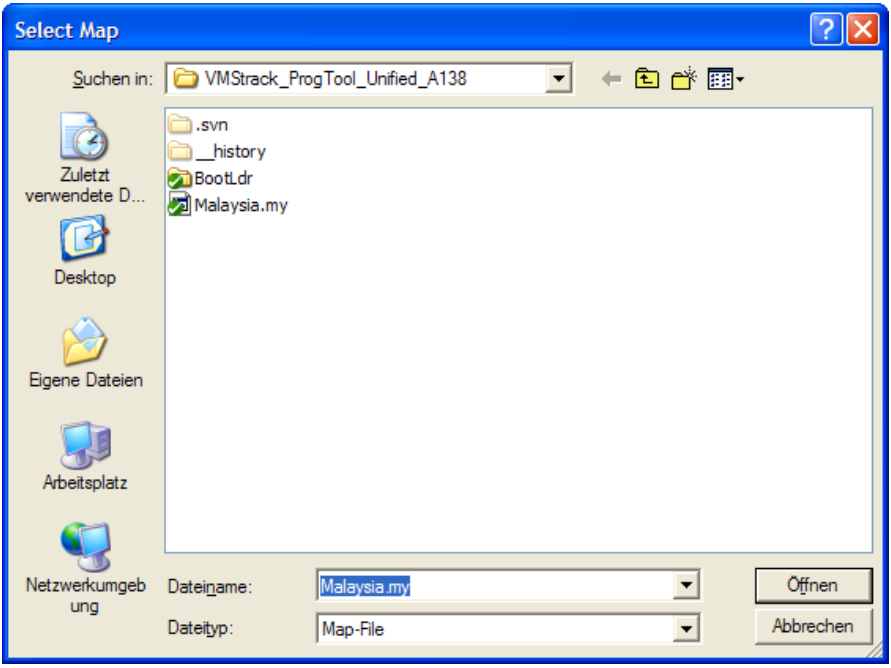
Remark: When Geofence Zone and Coastal Zone overlap, the Coastal Zone has got priority over the Geofence Zone!

9.6.2. Create Maps (Coastline / Geofence)

The vmsTRACK(-PRO) has got the capability of storing map information like the Malaysian coastline, coastline of neighbour countries and geofencing regions.

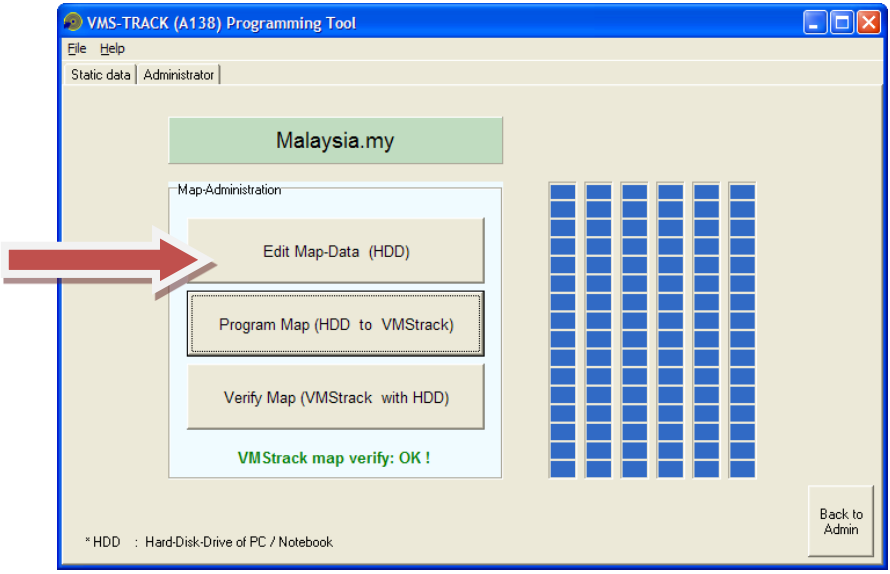
For managing the maps press on "Create Map" and then "Edit Map-Data".

You will be asked to enter the map file. Please choose the file.



Then the Map-Management Window opens. The ProgTool checks automatically, whether the vmsTRACK(-PRO) has got the selected map file programmed or not.

A text below appears, if the verification was O.K. or not.



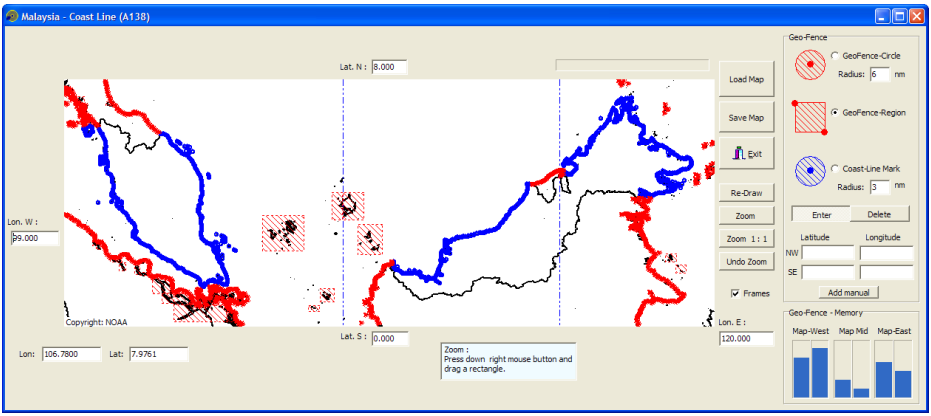
When you press on the button "Edit Map-Data (HDD)"

Then the Map-Editor opens with the map data, which are found on the Hard-Disk-Drive (HDD) of the PC or laptop.

9.7. Edit Map (Coastline / Geofence)

When you click on “Edit Map-Data (HDD)” you get the following window:

This is the drawing and displaying tool for map information.



Now you see the coast line of Malaysia and the neighbour countries.

The homeland coastline is the blue dotted line, which is the coastal zone.

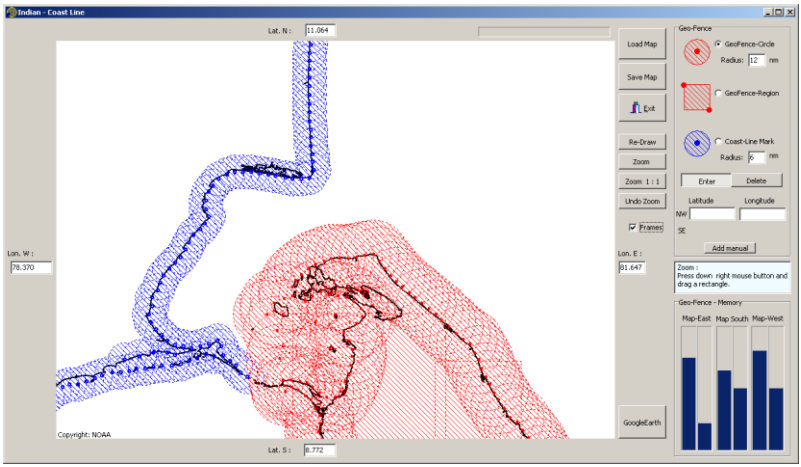
The red dotted lines and regions are the “Geofence” areas.

9.7.1. Zooming

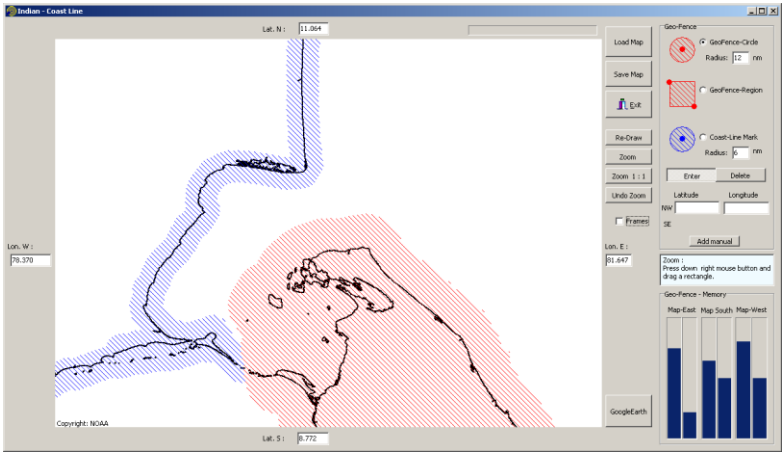
You can zoom into the chart by dragging a rectangle. Just press down with the right mouse button on the map and drag the rectangle. Then release the right button.

You can undo the zoom by clicking on the “Undo Zoom” button. To get the whole chart again click on the “Zoom 1:1” button.

If you don’t like zooming with the right mouse button, you just use the “Zoom” button and drag the rectangle with the left mouse button.

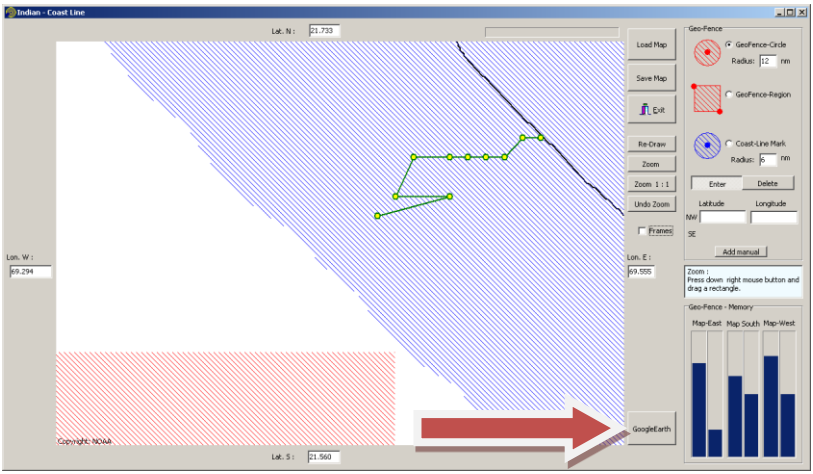


Here you see the dotted lines for proximity function (blue) and dotted lines and rectangle regions for the geofencing (red). You can turn on and off the “Frames” of the dots and rectangles. If you turn them off, the chart looks more convenient. For redrawing of the map please use the button “Re-Draw”.



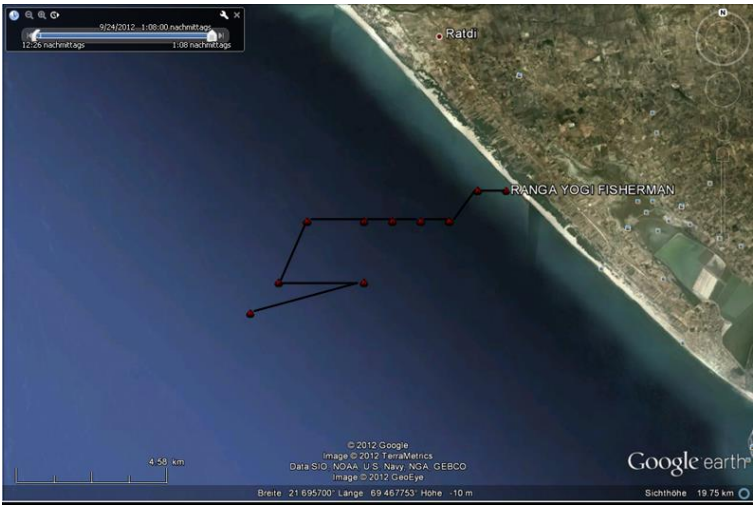
9.7.2. GPS-Track

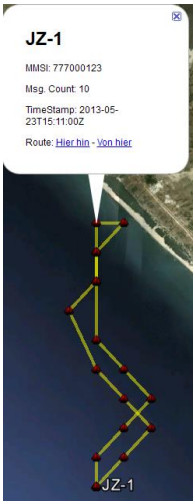
If there was a Track down loaded before, it will be shown automatically.



The green dotted line is the track. If you have Google Earth(TM) installed on your PC, you can click on „Google Earth“ button for showing the track in Google Earth:

With the time slider you can show the track in a movie. When you click on the symbols you get information about the date and time stamp of the AIS-P message.





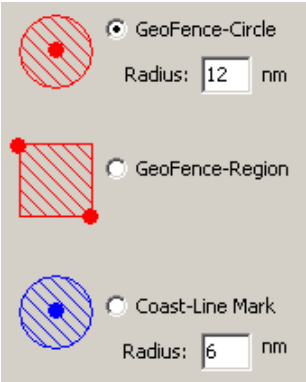
9.7.3. Drawing-Tools

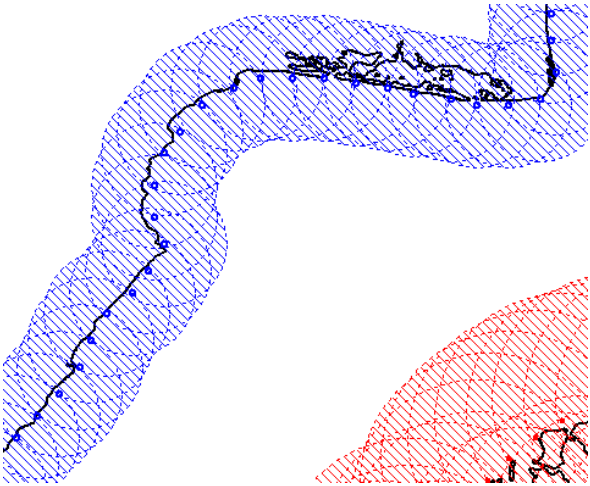
This program gives you all tools to generate the geo-data, which are used by the vmsTRACK(-PRO) later.
Here you see the basic elements, which are used for drawing.

The blue dots are used for marking the Malaysian coast line. You are free to place dots. The only limit is the

memory space. A good choice (trade-off between memory allocation and coast line approximation is using a dot every 3 nautical mile.

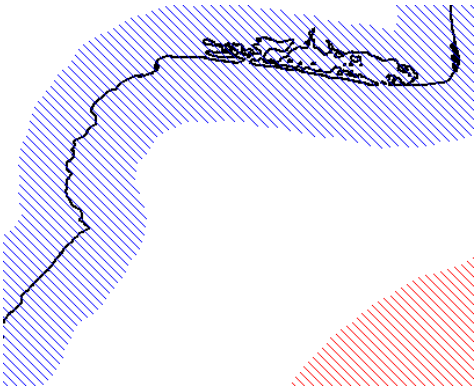
For geo-fence areas (red shapes) you can use dots or rectangles.





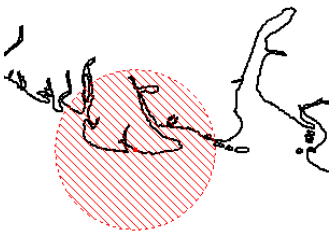
Here is an example of the coastline drawing with dots.

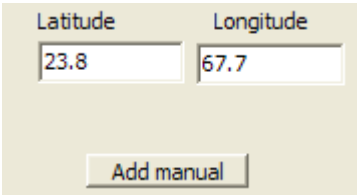
When you turn off the frames, you get the following picture:



A chain of dots allows a very precise definition of a coastal zone.

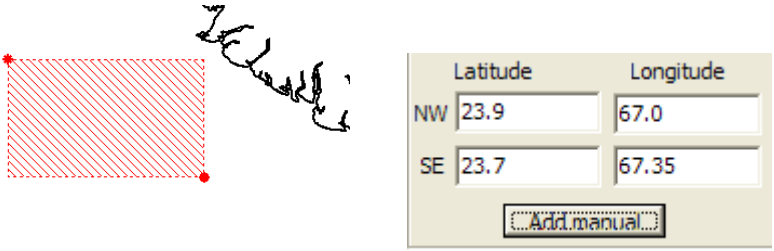
You also can create a dot by entering the latitude and longitude manually and then clicking on "Add manual":



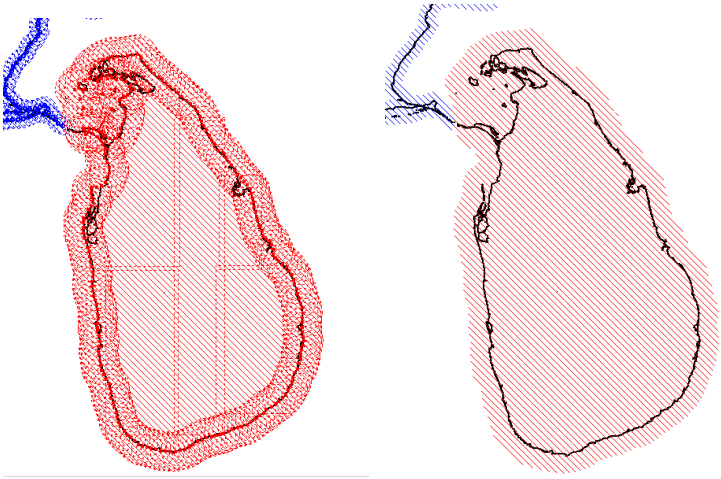


Geofence regions, that have a rectangular shape, will be entered by two pairs of coordinates. It is the North-West corner (upper left) and the South-East corner (lower right).

Here you can define this rectangle by "mouse click and drag" or by typing the lat and lon values:

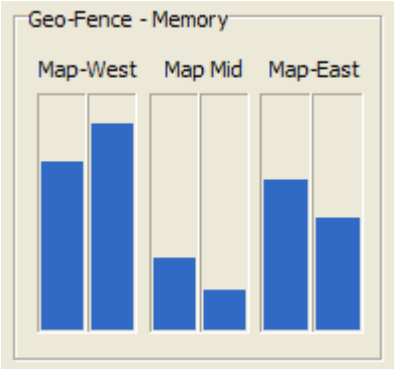


With the geofence areas you also can combine dots and rectangles, see following example:

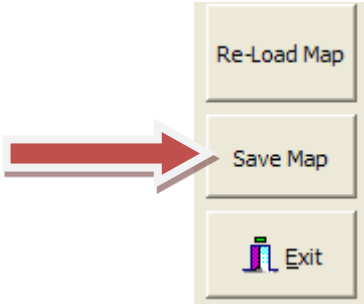


For deleting dots or regions press down the button “Delete” and then drag with the left mouse a rectangle over the elements you want to delete.

The following diagram gives the status of the used memory of each map page.

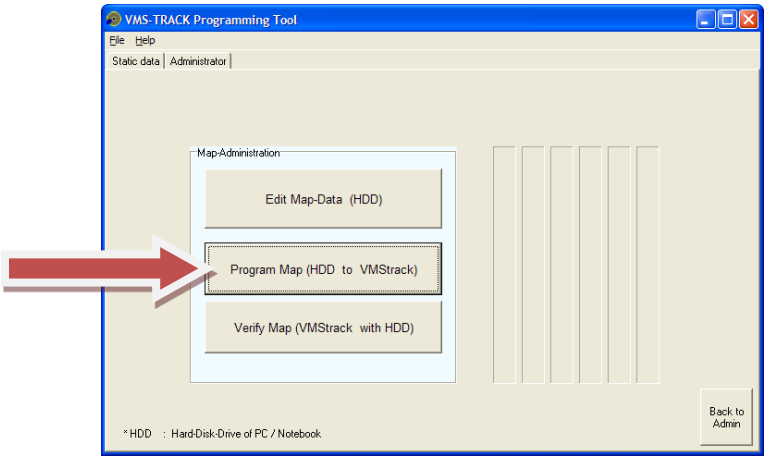


9.7.4. Save Map (Coastline / Geofence)



At the end you have to save the map drawing. Press on “Save Map” and choose a name for the map. If you want to revert the currently made changes, just press on "Re-Load Map". Keep in mind, that the map is stored on PC

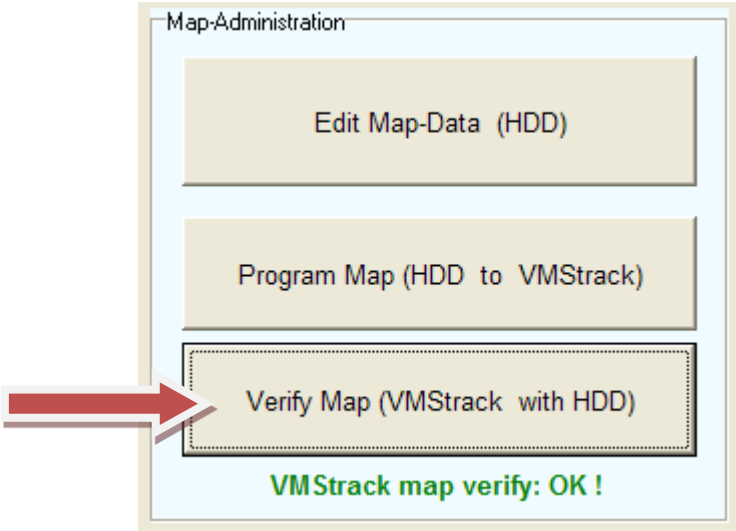
hard disk and not into the vmsTRACK(-PRO). For programming the map into the vmsTRACK(-PRO) click on "Program Map":



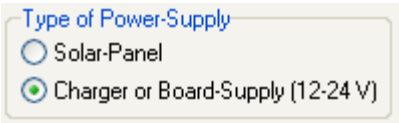
9.7.5. Verify Map (Coastline / Geofence)

If you want to check, whether the map stored in the vmsTRACK(-PRO) is identical to the map on the HDD (PC,

Laptop), you just click on "Verify Map" and select the map file. The result will be shown like the following figure:



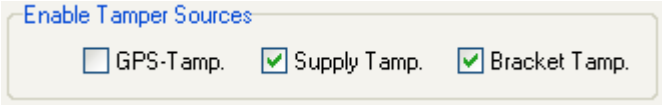
9.8. Type of Power-Supply



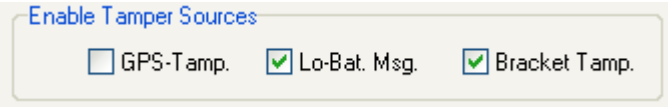
With these two settings you can define how the unit shall be charged or powered. When you have a solar panel

attached, the unit will be charged by this means. Otherwise you have to select "Charger or Board-Supply (12-24V)". The main difference between these two settings is, when the device was turned off due to low battery, then it restarts in transmission mode (solar panel) or it will start in charge-only mode (Charger or Board Supply).

9.9. Tamper Sources



or



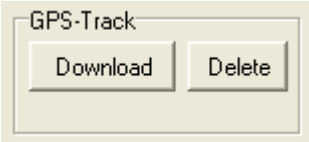
There are three tamper sources selectable.
First the GPS-Tamper means if somebody shields the vmsTRACK(-PRO) in that way, that the internal GPS-receiver is not able to get satellite signals. In that case the

shore station will be informed about that manipulation.

Second the "Supply Tamper" means if somebody removes the supply voltage (i.e. cutting the supply cable), the vmsTRACK(-PRO) will inform the shore station about that ("Power Tamper" bit in Figure 3). This is possible because the vmsTRACK(-PRO) has got internal rechargeable batteries. If you have a solar panel attached, a "Lo-Bat. Msg." will be transmitted, when the capacity of the battery goes below 50%.

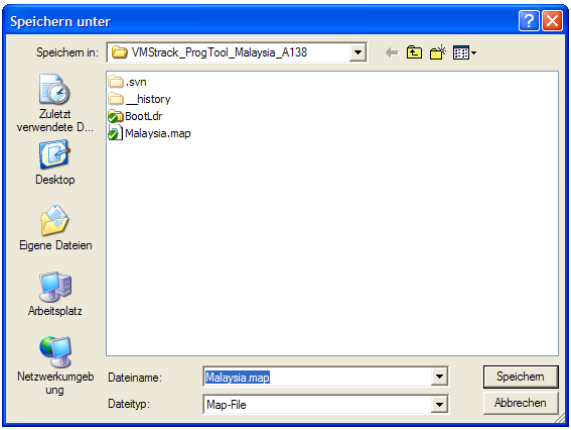
Third the "Bracket Tamper" can be de- / activated here. The Bracket Tamper is described in detail in chapter 9.3.

9.10. GPS-Download



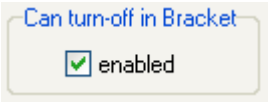
The vmsTRACK(-PRO) has got an internal memory where the track of the vessel is stored together with a time stamp. Every half nautical mile a track-point is stored. So a track of more than 128 nm [or 512 nm for vmsTRACK-PRO] can be stored. When the memory is full or older than 1 year, the oldest track points will be overwritten. Alternatively you can delete the track by pressing the “Delete” button.

When clicking on the “Download” button, the vmsTRACK(-PRO) responds with the GPS-track information and you will be asked to store this to a "Map" file. Please choose the appropriate map file.



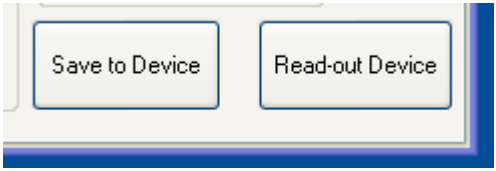
For viewing the track please see chapter "Maps".

9.11. Switching-off in Bracket

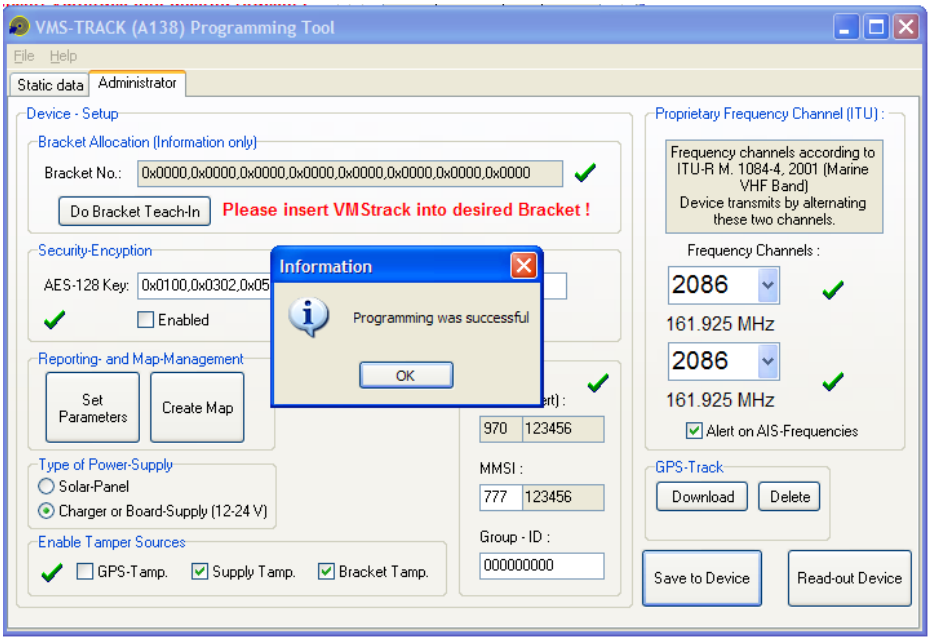


With this setting you can decide, whether the user can turn-off the device when it is inserted in the tamper-bracket, or not. This is useful, when the vmsTRACK(-PRO) is required to send all the time. You can always turn-off the unit outside the tamper-bracket.

9.12. OK- and Cancel Button



For programming and setting up the vmsTRACK(-PRO) device, you have to press the "Save..." button. All the settings, which were made in the "Administrator" page, will be stored into the vmsTRACK(-PRO) and double checked again. You will see that with the green marks.
If you want to discard the changes you made on the Administrator page, just press on the "Read-out..." button. The current settings will be downloaded from the device.



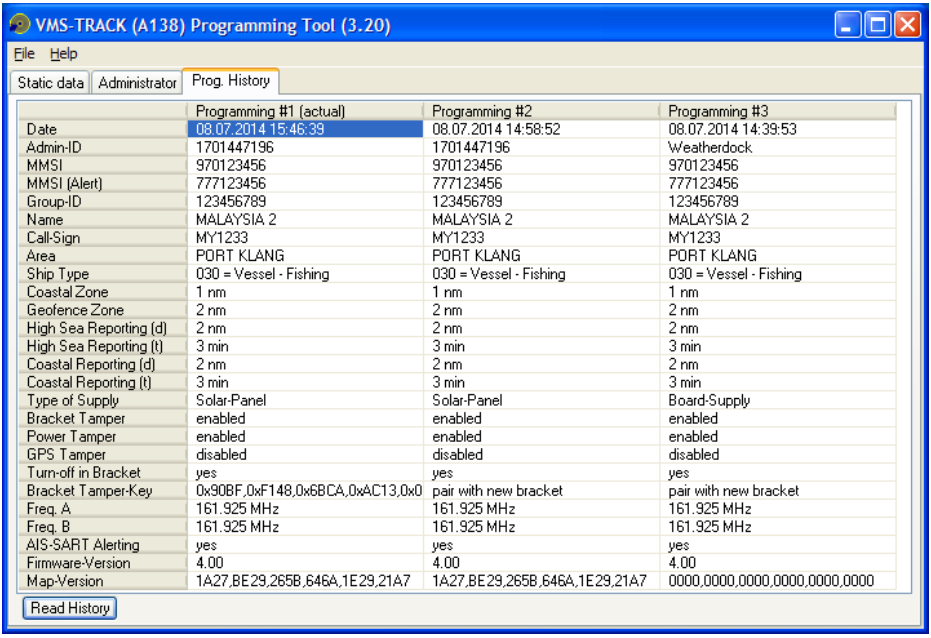
9.13. History of Programming

The vmsTRACK(-PRO) stores the last three programming sessions.

A programming session means, that the vmsTRACK(-PRO) is inserted into the Programmer and changes are made as described above. During a session you can save multiple

times without wasting the three storages! As soon the vmsTRACK(-PRO) is removed from the programmer and the unit switches off, then the session has finished.

On the page "Prog. History" you can show up the details of the last three programming sessions by pressing "Read History":

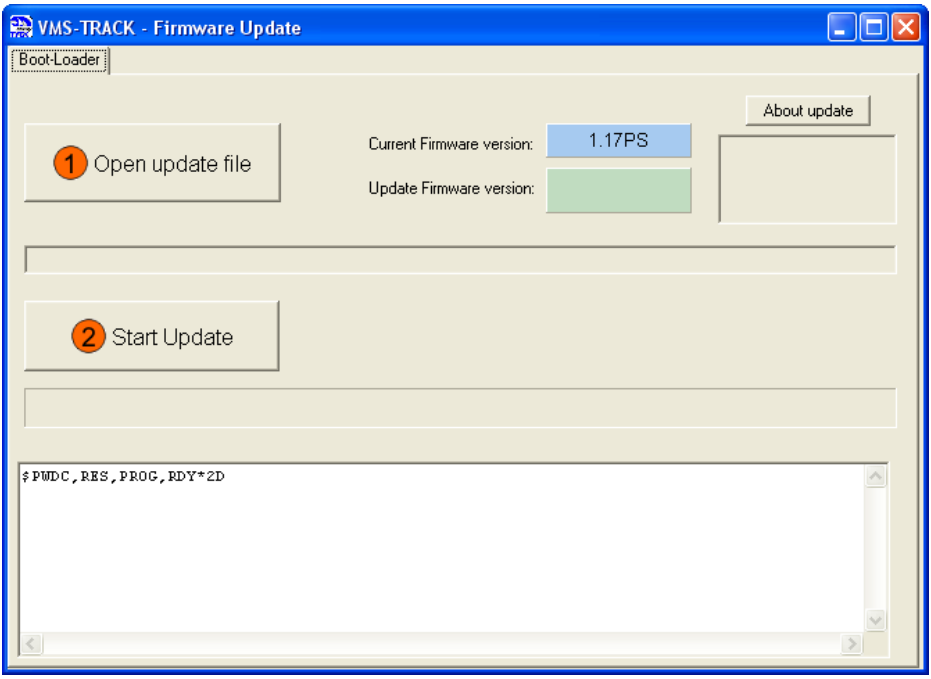


	Programming #1 (actual)	Programming #2	Programming #3
Date	08.07.2014 15:46:39	08.07.2014 14:58:52	08.07.2014 14:39:53
Admin-ID	1701447196	1701447196	Weatherdock
MMSI	970123456	970123456	970123456
MMSI (Alert)	777123456	777123456	777123456
Group-ID	123456789	123456789	123456789
Name	MALAYSIA 2	MALAYSIA 2	MALAYSIA 2
Call-Sign	MY1233	MY1233	MY1233
Area	PORT KLANG	PORT KLANG	PORT KLANG
Ship Type	030 = Vessel - Fishing	030 = Vessel - Fishing	030 = Vessel - Fishing
Coastal Zone	1 nm	1 nm	1 nm
Geofence Zone	2 nm	2 nm	2 nm
High Sea Reporting (d)	2 nm	2 nm	2 nm
High Sea Reporting (t)	3 min	3 min	3 min
Coastal Reporting (d)	2 nm	2 nm	2 nm
Coastal Reporting (t)	3 min	3 min	3 min
Type of Supply	Solar-Panel	Solar-Panel	Board-Supply
Bracket Tamper	enabled	enabled	enabled
Power Tamper	enabled	enabled	enabled
GPS Tamper	disabled	disabled	disabled
Turn-off in Bracket	yes	yes	yes
Bracket Tamper-Key	0x90BF,0xF148,0x6BCA,0xAC13,0x0	pair with new bracket	pair with new bracket
Freq. A	161.925 MHz	161.925 MHz	161.925 MHz
Freq. B	161.925 MHz	161.925 MHz	161.925 MHz
AIS-SART Alerting	yes	yes	yes
Firmware-Version	4.00	4.00	4.00
Map-Version	1A27,BE29,265B,646A,1E29,21A7	1A27,BE29,265B,646A,1E29,21A7	0000,0000,0000,0000,0000,0000

9.14. Firmware Update

With that Programming-Tool you have got also the possibility to update the vmsTRACK(-PRO) firmware. This is called “boot load”.

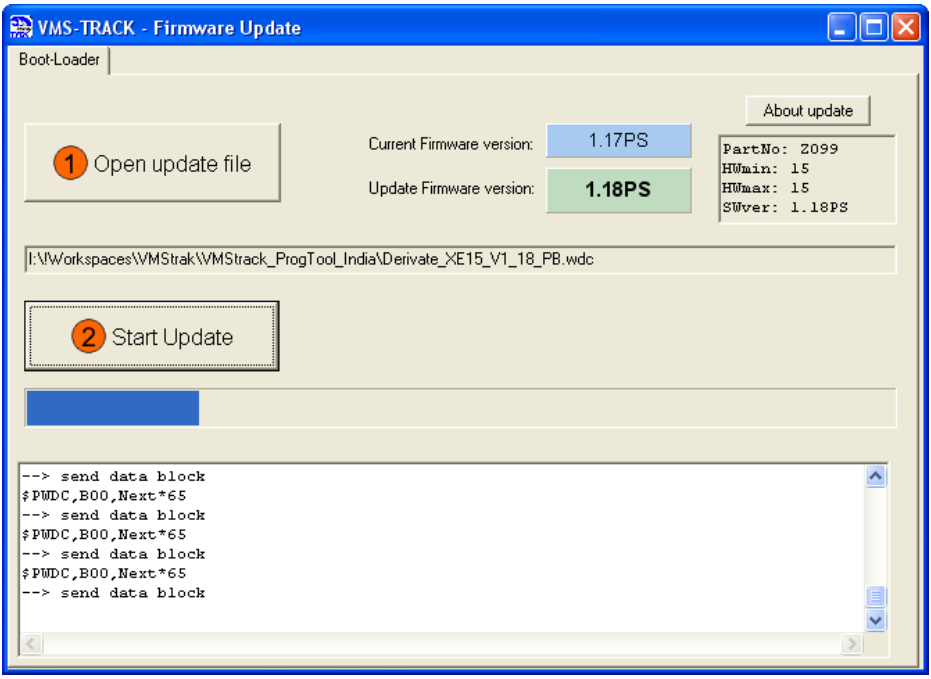
When you got an update file from the distributor or manufacturer of the vmsTRACK(-PRO), you have to store it on PC or notebook.
The update files have always the extension “.wdc”.
Tor updating just insert the vmsTRACK(-PRO) into the programmer and wait until the white LED is the only one, which is on.
Then you choose the COM port and click on the menu-bar “File -> Update”.
You will see the following window:



With the button (1) you select the update file and with the button (2) you start the update process.

This process takes some time, so do not interrupt this process until it is finished.

If you interrupt, the device will not work anymore and you have to do the update again.



When finished the vmsTRACK(-PRO) re-boots, so you have to wait until the white LED is the only one which is on.

If you are asked to reprogram the, confirm with "yes".

Pressing on “Help” at the menu bar, you can double-check the actual firmware version of the vmsTRACK(-PRO):


Information
VMS-TRACK Programming Tool (2.1)
Firmware Version: 1.18PS
Copyright 2013
TechAF Company
OK

Technical Data

Parameter	Value
Dimension	130 x 30 x 70 mm
Weight	380 g
DC supply	rechargeable Li-Ion-batteries
Frequency	Locating object locating: Marine band programmable by distributor : 155.450 ... 162.025 MHz (contact local authority for frequency assignment)
Radiated Power	> 2 W e.i.r.p. (typ.)
GPS receiver	Approved to IEC 61108-1
VHF-Antenna	extended, vertical polarized
Operating time (normal operation)	min. 100 hours with fully charged batteries
Operating time (alert)	min. 36 hours with fully char. bat.
Battery storage (fully charged)	min. 3 month without significant loss of charge
Operation temperature range	-10°C to +55°C

Parameter	Value
Storage temperature range	-30°C to +70°C
Geofence/Coastline-Memory space	3000 points
Geofence/Coastline resolution	0.5 nautical mile
GPS track storage	256 (or 1024 vmsTRACK-PRO) points
Display	3 LEDs and a "Flash"-LED
Activators	2 buttons
Standards	IEC 62287-1 (CSTDMA), IEC 61097-14, IEC 60945, ITU-R M.1371-5, IMO Res. MSC.246(83), IEC 61108-1
Supported AIS messages	Msg. 1, Msg. 18 AIS-P Positions Report. Msg. 5, Msg. 24A/B AIS-P Static Report. Msg. 14: (SART) Alert Message Msg. 25: AIS-P Encrypted Message.

Parameter	Value
Environment	Waterproof: Down to 10m water level Exterior Finish: Highly visible yellow Compass safe distance: 80cm Mechanical shock Drop into water: 20 m Drop on concrete surface: 1m Thermal shock Temperature difference: 45 K Resistance Oil, seawater and sun light resistant

10. DECLARATION OF CONFORMITY

EC DECLARATION OF CONFORMITY

We: **Weatherdock AG,**
Sigmundstrasse 180, D-90431 Nürnberg

declare under our sole responsibility that the products

Name and Type	easyRESCUE (AIS Search and Rescue Transmitter); Weatherdock article number A-040
	easyRESCUE-A (AIS Search and Rescue Transmitter); Weatherdock article number A-049
	vmsTRACK Identifier, vmsTRACK-PRO identifier, Type Number: A099, A130,A138, A164, A193 and easyPOS'N'HOOK A140

provides equivalent functionality to the following standards, except that it is optimised for transmission from onboard of small vessels at sea

EU Council Directive 96/98/EC	Directive 2013/52/EU MED (9th Amendment)
Regulation SOLAS 74 as amended where "type-approval" is required	• SOLAS 74/2009 Reg. III/4 • SOLAS 74/2009 Reg. IV/14
Applicable regulations of SOLAS 74, as amended, and the relevant resolutions and circulars of the IMO	• SOLAS 74/2009 Reg. III/6 • SOLAS 74/2009 Reg. IV/7 • IMO Res.MSC.246(83) • IMO Res.MSC.247(83) • IMO Res.MSC.256(84) • ITU-R M. 1371-4 (2010)
Testing standards	• IEC 60945 (2002) incl. IEC 60945 Corr. 1 (2008) • IEC 61097-14:2010 • IEC 62287-1 (AIS-Class B) : Carrier Sense operation
Name, Address of manufacturer	Weatherdock AG, Sigmundstrasse 180, D-90431 Nürnberg
Notified Body for Module B + D	BSH-Cert, 0735
Additional standards or certifications	• IEC 61108-1(2003) • R&TTE – 1999/5/EC • USCG • FCC • ATEX II 3G IIB T6
Nr. of Module B and D certificates	• Module B : 4581/001/4552369/13 • Module D : 4583/000/09201/2370/14

11. BOX CONTAINS

- vmsTRACK(-PRO) transmitter, fully functional
- Manual

12. AVAILABLE ACCESSORY

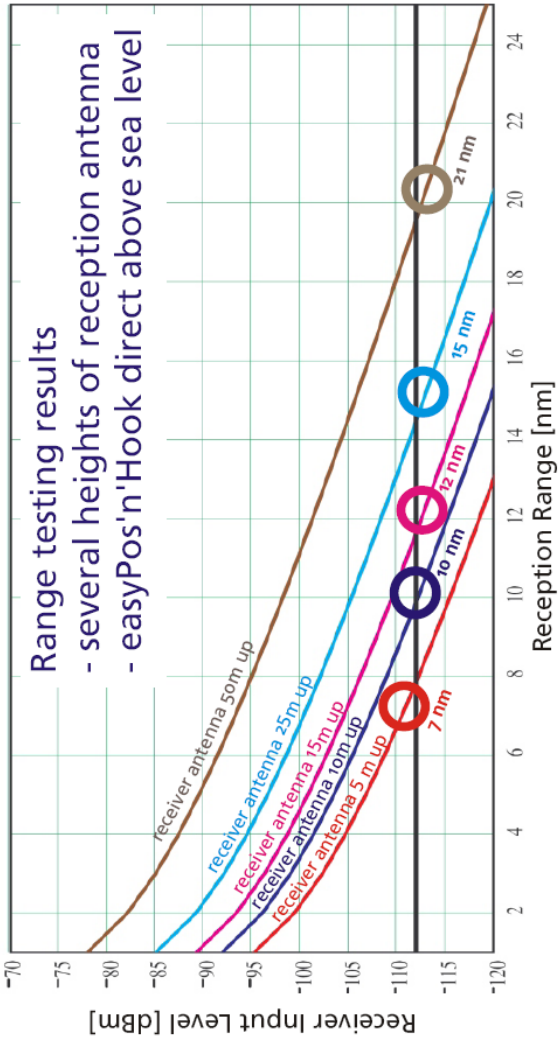
- Tamperproof & Power Bracket, A122
- Power Bracket (Charger), A121
- Dongle, B084
- vmsTRACK(-PRO) VHF receiver
- VHF antenna

Please contact specialized distributors.

14. FAQ

Problem	Reason	Solution
The GPS-LED is blinking at the end of the test	No GPS reception	Repeat the test with line of sight to the sky.
Cannot activate the device.	Battery is empty	**Recharge the Li-Ion batteries only with the charger station for the vmsTRACK(-PRO)**
Battery change		**The Li-Ion batteries can be changed by distributor only.**

15. ANNEX RANGE TEST RESULTS



16. SUPPORT

17. WARRANTY

This Weatherdock AG product is warranted to be free from defects in materials or workmanship for 24month from the date of purchase. Within this period, Weatherdock AG will at its sole option repair or replace any components that fail in normal use Such repairs or replacement will be made at no charge to the customer for parts or labor, provided that the customer shall be responsible for any transportation cost. This warranty does not cover failures due to abuse, misuse, accident or unauthorized alteration or repairs.

THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED OR STATUTORY, INCLUDING ANY LIABILITY ARISING UNDER ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, STATUTORY OR OTHERWISE.

IN NO EVENT SHALL WEATHERDOCK AG BE LIABLE FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM THE USE, MISUSE, OR INABILITY TO USE THIS PRODUCT OR FROM DEFECTS IN THE PRODUCT.

Weatherdock AG retains the exclusive right to repair or replace the unit or software or offer a full refund of the purchase price at its sole discretion. Such remedy shall be your sole and exclusive remedy for any breach of warranty.

18. CONTACT

WEATHERDOCK AG

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Germany

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info@wetaherdock.com