Ocean

Handheld VHF Marine Transceiver

USER'S MANUAL

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1 INTRODUCTION

Congratulations on choosing **Ocean**! Your handheld marine transceiver was designed as a high-quality, robust, and reliable marine radio, using the latest technology available. **Ocean** ensures secure transmission and reception on all VHF marine channels, as required by the International Telecommunications Union (ITU). Your transceiver is composed of the highest-quality electronic components, conforms to EN 301 178-2, CE/99/05 regulations, and is water resistant (splashproof), ensuring clear, reliable communication for many years. **Ocean** is equipped with a microprocessor, which controls not only the marine band tuning, but also many advanced functions such as Dual Watch and memory channels.

The following are the principal features of your transceiver:

- **PLL (Phase Locked Loop) synthesizer circuit** – for precise and stable channel selection.
- **Large, back-lit LCD display** – constantly displays Ocean's parameters and settings. The backlighting enables you to view the screen in case of little environmental light.
- **Automatic squelch**– while in standby, this function automatically eliminates bothersome background noise.
- **Automatic Power Saver** – saves energy when in standby, prolonging battery life.
- **Recall button for Channel 16** – for instant access to channel 16 (the universal marine channel for emergency contact).
- **Channel scanning** – automatically searches for marine band channel signals.
- **Dual Watch** – for monitoring of radio traffic on two channels simultaneously.
- **VOX (Voice Operated eXchange)** – activates transmission when the user begins speaking. When used with optional microphone accessories, this feature enables the user to operate hands-free, clipping the transceiver to a belt.
- **Call button –** briefly sends the transceiver into transmission mode, generating audio call tones.
- **Clock and chronometer –** enables the user to view the current time on the LCD display and to use the transceiver as a chronometer that is precise to the hundredths of a second.
- **High/low power selection** – reduces transmission power in short-distance communication, allowing **Ocean** to save energy and reducing the risk of interference.
- **Multifunctional bar indicator**– in reception mode, this function indicates the incoming signal strength using a series of bars. In transmission mode, it indicates the output power.
- **Battery level indicator** – constantly displays the battery level.
- **Keypad lock** – locks the transceiver keypad to avoid the accidental activation of buttons or settings.
- **20 memories** – for storing, rapid recall, and scanning of your 20 most-used channels.
- **Power is supplied through 4 normal AA batteries** – the (optional) batteries can be either rechargeable or alkaline, for maximum flexibility of use and operating cost.
- **Sockets for speaker, microphone, and battery charger (SPK, MIC CHG)** – these sockets enable the use of various microphone accessories (headphone, microphone/speaker, etc), as well as the use of an optional standard "MW904" wall battery charger.
- **20 private channels** – using the optional PRG-OCEAN program, you can program 20 channels within the VHF marine band.

📄 *The manufacturer, with its effort to constantly improve product quality, reserve the right to change characteristics and features without prior notice.*

2 ABOVE ALL… SAFETY!

2.1 Symbols used

For ease and convenience of use, this manual uses symbols to highlight urgent situations, practical advice, and general information.

! **Symbols such as this one indicate a crucial description regarding technical repairs, dangerous conditions, safety warnings, advice, and/or other important information. Ignoring these symbols may result in serious problems and/or damage and/or personal injury.**

📄 *Notes such as this one indicate practical advice that Midland suggests be followed for the optimal performance of **Ocean**.*

Important sentences and words have been underlined.

2.2 Warnings

2.2.a General

! **Before using the transceiver, carefully read all the instructions contained in this manual in the order in which they are written. Cross-references to paragraphs and chapters are provided for ease of use only. After reading, keep this manual for future reference.**

! **Read and follow all the warning and instruction labels found on the radio and its accessories.**

! **Always observe laws and regulations regarding the use of marine transceivers, which may change according to the country you are in. Where prohibited, or in areas where the radio may cause interference or danger, turn off your radio.**

! **Do not transmit without an antenna connected – although the radio is protected, this may seriously damage its R.F. power stages. Do not use your transceiver if the antenna is damaged.**

! **Keep the antenna at least 2.5cm from your head and body during transmission, and keep a distance from other electrical devices. Your transceiver contains a radio transmitter. Be aware that, when you press the *PTT* button, the radio emits radio frequency (RF) energy. If you use cardiac stimulators, hearing aids, or other medical devices, consult your physician or the manufacturer of the device to ensure the device is adequately protected from RF energy. Your physician will be able to suggest ways of obtaining this information.**

! **Keep a tight grip your radio (a fall may damage it) and ensure the PTT button is not pressed accidentally when you do not need to transmit. Do not hold the transceiver by the antenna! This is a delicate part of the device and is vital for the proper functioning of the radio.**

! **Pay attention to environmental conditions – although Ocean was designed to operate under the most severe conditions, it is important to avoid exposure to environments that are excessively humid or dusty, or to temperatures outside the -15 to +55°C° range. Also avoid exposure to direct sunlight, jarring, and excessive vibration.**

! **Before using the radio, ensure that all protective covers and parts are in perfect operating condition, in order to ensure maximum protection against humidity and atmospheric agents.**

! **Although this radio was designed to be water resistant, avoid getting it wet as much as possible and do not let any liquids fall on it. If the transceiver or one of the accessories gets wet, dry it off as soon as possible with a soft, clean cloth. If you feel that liquid may have penetrated the radio's housing, contact a service centre for a diagnostic check.**

! **Do not use the radio, its accessories, and/or substitute the batteries in potentially explosive environments. A single spark may cause an explosion.**

! **Do not open the radio for any reason! Ocean's precision mechanics and electronics require experience and specialized equipment; for the same reason, the radio should under no circumstances be realigned as it has already been calibrated for maximum performance. Unauthorized opening of the transceiver will void the warranty.**

! **Use original accessories only; otherwise you may seriously damage your handheld transceiver.**

! **Turn off the radio before cleaning it. For further information, refer to Chapter 7.**

2.2.b Batteries

! **Before using the battery charger, carefully read all notes and cautions regarding this equipment.**

! **Do not short-circuit the battery terminals: doing so may result in fire, burns, or explosions.**

! **Never throw batteries into a fire or expose them to high temperatures; doing so may cause fires or explosions. Always follow the regulations set out by your country of residence.**

! **Use only the original batteries and battery charger. Use of unapproved accessories may cause burns, fires, or explosions, and may create serious damage to the radio/batteries or to people.**

! **The battery charger should only be used indoors.**

! **Ensure your power supply conforms to the one required for your battery charger (AC adaptor). If you are unsure, check with your vendor or your local electricity supplier.**

! **To avoid damaging the power cord to your battery charger, connect it in a place where it will not be stepped on and where nothing will be placed on top of it. Insert the prongs into a socket that has been grounded.**

! **Avoid shocks and excessive vibrations. Do not use the battery charger if it has been subjected to strong shock, had a fall, or appears damaged; immediately contact an authorized service centre.**

! **Do not dismount the battery charger. Any repair work must be performed exclusively by authorized service centers. For further information, contact your local supplier.**

! **To reduce the risk of electrical shocks, disconnect the power cable before performing cleaning or maintenance. Grasp the plug (not the cord!) when removing it from the socket. Use of inappropriate extension cords may cause fire or electrical shocks.**

! **Do not expose the batteries directly to temperatures outside the -20°C to +35°C range during storage and do not charge them in temperatures outside the +5 to +55°C range.**

2.3   Assistance

We advise you to write the serial number of your transceiver in the space provided below. This number is found on the rear panel of the transceiver and will be useful in the event of repair/assistance and/or loss and/or theft.

! Serial number_____

3 DESCRIPTION OF PARTS

3.1 Description of parts and commands

Refer to the following pictures to locate and get familiar with the various parts of **Ocean**:

1) **Antenna connector (SMA type)**. For attaching the rubber ducky antenna provided.
2) **ON/OFF/VOLUME knob** – turns the equipment on/off and adjusts audio volume reception.
3) **LCD display** – the LCD (liquid crystal) display constantly displays the operating status of Ocean and functions currently in use.
4) **SPK, MIC CHG, and DATA sockets** (on the radio's side, under a protective rubber flap) – perform the following functions:
   - **SPK** and **MIC CHG** – jack sockets respectively for the speaker and external microphone. Used together, these are used for connection of optional accessories, such as microphones, speakers, head/earphones, etc. Also, the MIC CHG socket is used for connecting the (optional) standard MW904 wall battery charger. For further details regarding optional accessories, please refer to Chapter **Fout! Verwijzingsbron niet gevonden.**.
   - **DATA** (channel programming) – used by the supplier or service centre for programming private channels; their use must be previously authorized by the appropriate local authorities.
5) ⏎ **button** – confirms the selected setting.
6) ▼ **button** – for scrolling downwards numerically through the tuned marine channels and for setting functions.
7) **Internal microphone** – the transmission microphone is located here.
8) **Internal speaker** – the reception speaker is located here.
9) **Contacts for battery charging** (bottom of the radio) – for connecting the (optional) RC445 intelligent, table-top battery charger.
10) ▲ **button** – for scrolling upwards numerically through the tuned marine channels and for setting functions.
11) **F (Function) button** – for accessing the various programming functions and settings of the radio.
12) ★ **button/M (Monitor)** – activates display backlighting, and excludes (temporarily or permanently) the circuit which silences the receiver in the absence of signals (squelch) so as to receive signals that are extremely weak.
13) ⚷ **HI/LO button** – selects high or low transmission power, and activates/deactivates the keypad lock.
14) **CALL button** – sends an audio call (4 two-tone bleeps) on your currently selected channel.

15) **STW (Stop Watch - Chronometer) button –** recalls the chronometer function.
16) **PTT (Push To Talk) button** – when pressed, this button sends the transceiver into transmission.
17) **CLOCK button –** recalls the clock function.
18) **Ch 16 button** – instantly recalls channel 16.
19) **Belt clip fastener** – for connecting the radio to the belt clip.
20) **Cover of battery compartment** – it holds four AA batteries (rechargeable 1.2V NiMH, or alkaline 1.5V) to supply your handheld transceiver.
21) **Clasp on battery compartment** – holds the battery compartment cover in place.

3.2   Display symbols

Your marine transceiver is fitted with an LCD (liquid crystal) display to keep you up to date on its operating status. The symbols and parameters that may appear are outlined below:
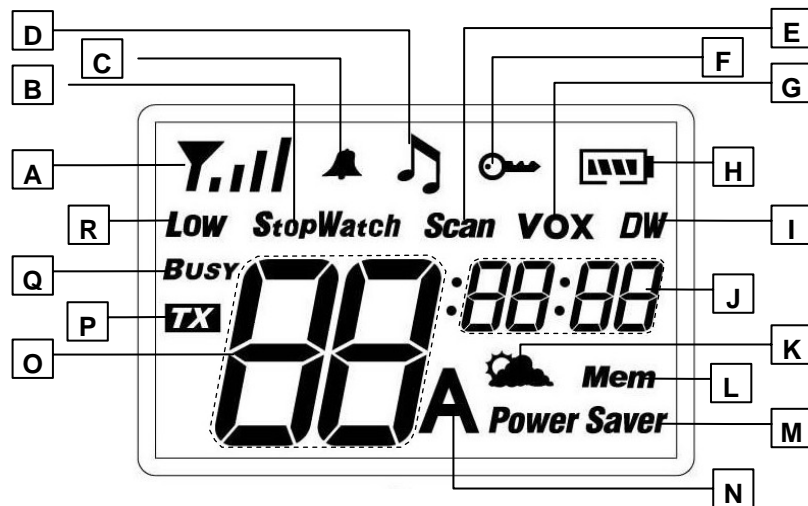
A) **Field strength indicator /relative transmission power** – during reception, this displays the strength of the signal received. During transmission, it indicates the relative output power. The level indicated is proportional to the number of bars seen.

B) **StopWatch** (chronometer) – appears on the display when the chronometer function is activated.

C) **Call** – indicates that the two-tone audio call is activated (the CALL button is pressed).

D) **Keypad tones** – indicates the activation of tones to confirm when buttons are pressed.

E) **Scan** - appears when the transceiver is performing channel scanning.

F) **Keypad lock** – indicates that the keypad is locked.

G) **VOX** – appears on the display when the VOX (Voice Operated eXchange – hands-free transmission) function is activated.

H) **Battery level** – indicates the remaining battery power. The four bars disappear proportionately as power decreases. When the battery charge is no longer high enough to guarantee correct functioning of the transceiver, this icon will flash to signal that the batteries need to be recharged (or replaced).

I) **DW** – the transceiver is performing in Dual Watch mode.

J) These small numbers indicate different data according to the function selected, such as the memory channel selected, the band selected (INT, USA, CANADA), etc.

K) **Weather channels/information (only on the USA band)** – indicates that you are receiving on a weather channel, or that the channel you have selected is currently transmitting weather information.

L) **Mem** – indicates that you are using one of the programmed memories from your most-used channels.

M) **Power Saver** – appears when the power saver is active.

N) **A icon (only with the USA band) –** this icon indicates when an **A** channel has been set from the North American band.

O) These two large numbers indicate the marine channel currently selected. During regulation of sensitivity or delay in

VOX mode, they will read as **LE** (level) or **dL** (delay).

P) **TX** - appears when the radio is transmitting.

Q) **BUSY** – appears when the transceiver is receiving a signal.

R) **LOW** – indicates that low transmission power has been selected.

4   PREPARATION

Before using your transceiver, ensure that your package contains:

- The transceiver
- The flexible, rubber ducky antenna with **SMA** connector
- The belt clip
- The user's manual (this manual)

If any part is missing or damaged, contact your supplier as soon as possible.

📄 *In order for the device to function, you will require four AA batteries, either 1.2V NiMH rechargeable or 1.5V non-rechargeable alkaline. For further details, refer to par 4.3.*

📄 *To charge the NiMH batteries without taking them out of the radio, a standard MW904 wall charger is available, as well as a RC445 intelligent table-top charger. For further details, refer to par. 4.4.*

4.1   Connecting/removing the antenna

4.1.a   Connecting the antenna:

1) Hold the transceiver in one hand, with the antenna connector facing upwards; pick up the flexible, rubber ducky antenna by its base (the larger end, with the SMA connector).
2) Orientate the base of the antenna in the direction of the transceiver's antenna connector.
3) Screw the antenna into the antenna connector, turning it clockwise until it is firmly in place.

✋ ***Do not tight too much the antenna: doing so may damage the threaded connector on the radio or the antenna itself.***

4.1.b   Removing the antenna:

1) Follow step 1 outlined in paragraph 4.1.a
2) Unscrew the flexible, rubber ducky antenna, turning it counter-clockwise and removing it.

!   **Avoid transmitting without the antenna connected or with a damaged antenna. Although the radio is protected, doing so may seriously damage the R.F. power stages. Use the radio only with the antenna.**

## 4.2   Fastening/removing the belt clip

The rear belt clip allows the user to easily clip the transceiver to a belt. However, it may be necessary to remove the clip in order to make easier the radio maintenance or battery substitution. To fasten the clip to the radio, position it above the groove found of the back of the transceiver, then drag it downwards until it locks into place. To remove the clip from the belt, lift the release lever and drag the clip upwards until it comes free.

!   **Ensure the belt clip is correctly attached; otherwise the transceiver may become unattached accidentally and fall.**

4.3   Installing/removing the batteries

The transceiver operates with four AA batteries (not included). There are two battery options available:

- Rechargeable 1.2V NiMH – available in various capacities (in mAh). Higher battery capacity allows for greater duty, but requires longer recharging time.
- Non-rechargeable 1.5V alkaline.

📄 *For installing/removing the batteries, it is not necessary to remove the belt clip (procedure outlined in par. 4.2), however, this does make it easier to access the batteries.*

!   **Do not install a combination of rechargeable and alkaline batteries in your transceiver. Always use 4 AA batteries of the same type, brand, and from the same stock. Always use the same batteries as a set in order to ensure their level of charge is the same.**

!   **If you are not using the transceiver for an extended period, remove the batteries.**

4.3.a   To install the batteries:

1) Carefully unhook the rear clasp by slightly raising it and catching the depression with a fingernail, then rotating the clasp downwards.

2) Carefully lift the rear protective cover from the battery compartment and remove it.

3) Insert the batteries (rechargeable or alkaline) in the battery compartment, ensuring the batteries are correctly oriented in their polarity, as indicated on the inside of the battery compartment.

4) Carefully insert the cover's tabs into the slots at the top of the battery compartment, and then slowly press the cover down against the battery compartment until it is perfectly aligned with the transceiver body.

5) Carefully return the clasp onto the protective cover, pressing until it clicks into place.

! **Ensure you have properly closed the battery compartment cover.**

4.3.b   To remove the batteries:

1) Follow steps 1 and 2 as outlined above.

2) Remove the batteries from the radio.

3) Follow steps 4 and 5 as outlined above.

4.4   Recharging the batteries

Two types of battery chargers are available. Each one is able to charge NiMH batteries without removing them from the radio:

- Standard MW904 wall battery charger – this is the least expensive. It supplies a slow charge, allowing for maximum battery life. For further details, refer to par. 4.4.a.
- RC445 intelligent table-top battery charger – for rapid charging and greater flexibility of use. It also monitors the charge, and once batteries are charged, switches to trickle charging. For further details, refer to par. 4.4.b.

New batteries do not immediately allow for maximum duty, as they must be "run in" through at least 3 complete cycles of charge/discharge.

! **Use the battery charger only if you have installed four rechargeable NiMH batteries. Never attempt to charge other types of batteries (particularly alkaline) – doing so may cause explosions or personal harm.**

! **Read the battery usage warnings outlined in par. 2.2.**

4.4.a   Standard MW904 wall battery charger

1) Ensure the radio is turned off (it must remain off for the entire period of charging).

2) Carefully lift the rubber flap on the right side of the transceiver, slipping a fingernail into the center left part, and rotating it towards the right, as indicated in the figure.

3) Insert the plug at the end of the MW904 battery charger cable into the **MIC CHG** socket, then connect the battery charger to an AC power source.

4) Once the batteries are charged (see table below for charging times), disconnect the battery charger from the AC power source, then disconnect the transceiver from the battery charger.

5) Return the rubber flap to its place.

Code	Battery capacity (mAh)	Time (hours)
C696	1.200	8
C697	1.700	11.5
C734	2.300	15.5

TABLE OF APPROXIMATE TIMES FOR COMPLETE RECHARGE, ACCORDING TO THE BATTERY TYPE USED.

! **Do not overcharge the batteries! When the batteries are completely charged, the charging process does not stop automatically. Do not forget to disconnect the transceiver from the battery charger as soon as possible after charging is complete, otherwise you may seriously damage the batteries and/or the transceiver.**

! **For successive charging, longer duty, and battery life, refer to par. 4.5.**

! **Do not forget to replace the rubber flap after charging.**

4.4.b   RC445 Intelligent, table-top battery charger

This battery charger is able to rapidly charge batteries and to detect when the charging is complete, switching automatically the trickle charge.

1) Insert the transceiver, with the charging contacts facing downwards, into the RC445 battery charger slot, then connect the battery charger to an AC power source. Charging will begin, and an LED indicator will light up.
2) Once charging is complete, a green LED light will appear on the battery charger, indicating the operation is complete and the device has switched the trickle charge.
3) When possible and for increased security, remove the transceiver from the charging slot and disconnect the battery charger from the AC power source.

! **For successive charging, longer duty, and battery life, refer to par. 4.5.**

4.5   Proper use of rechargeable batteries

When possible, recharge batteries only when <u>at least</u> two of the icon bars have disappeared (the icon should indicate

). Be aware that charging time will be shorter in proportion to the amount of residual charge remaining in the battery, therefore, when only two bars appear in the icon, this indicates you will require about 50% of time indicated on the table in par. 4.4.a. This is particularly important if you use the MW904 standard charger, otherwise you risk overcharging the batteries.

If you use the batteries properly, you will obtain at least 400 cycles of charge/discharge at maximum duty. It is normal for battery duty to gradually decrease after about 2/3 of the battery's life.

📄   *Rechargeable battery packs lose their charge over time even if they are not used (auto-discharge); this is normal. A NiMH (Nickel Metal Hydrate) battery may lose 10 – 20% of its energy within a few days.*

4.5.a   Memory effect

Rechargeable NiMH (Nickel-Metal-Hydrate) batteries are virtually unaffected by the "memory effect". This phenomenon is associated with a drastic reduction of battery autonomy and is triggered if the batteries are regularly charged before having lost at least 50-75% of their power and/or are not completely recharged. To avoid the memory effect:

- When possible, recharge the batteries only when they are completely discharged; i.e. when the battery indicator will be <u>flashing</u>.
- Do not disconnect the battery charger before the time indicated for complete battery charging.
- Discharge and recharge your batteries completely at least twice a month.

In any case, the best solution for avoiding the memory effect is to use in turn two battery sets: one in use, and the other being charged as spare set.

The memory effect can be easily eliminated by completely charging/discharging the batteries 3 or 4 times.

📄   *The memory effect should not be confused with the normal battery life, which is 400 cycles of charge/discharge on average. It is completely normal for operating duty to decrease when the batteries have reached the end of their life; at this point, you will need to substitute the battery set.*

5 STANDARD FUNCTIONS

5.1 Turning Ocean on/off

To turn on the transceiver, turn the **ON / OFF / VOLUME** knob clockwise until it clicks on: the LCD display will come on, and you will hear a beep (acoustic signal).

📄 *The LCD display backlighting will automatically turn off after approx. 10 seconds in order to save energy, though the display itself will remain active.*

To turn off the transceiver, turn the knob counter-clockwise until you hear another click.

5.2 Volume regulation

Bring the **ON / OFF / VOLUME** knob to medium. Once the transceiver receives a signal, adjust the volume to a comfortable level. If no signal is received, use the ★/M button as described in par. 5.5.

5.3 Selecting a channel

Press the ▲ or ▼ buttons respectively to scroll up or down through the marine channels until finding the desired channel. To scroll quickly through the channels, hold down the ▲ or ▼ button until you reach the desired channel.

📄 *The marine band does not include some channel numbers. Refer to the frequency table in Chapter 11. Furthermore, channels may have a frequency reception that is different from the transmission one (duplex channels) or it is the same (simplex channels). Normally, communication between vessels can only take place on simplex channels.*

! **Your transceiver is preset on international channels. Depending on the country you are in, it is your responsibility to select INT or USA channels, depending on the local regulations in order to avoid interference. For further details, refer to par. 6.4.**

5.4 Transmission and reception

📄 *During transmission and reception, ensure the antenna is as vertical as possible and is free from obstacles in the direction of your party.*

5.4.a Reception

When the **PTT** is not pressed, the radio is in reception and is ready to receive incoming communication on the currently tuned channel (stand-by). If you are not receiving communications in stand-by and have not activated any commands for at least 10 seconds, the display will flash **Power Saver**, indicating that the power saver function has been automatically activated. The radio will remain ready to receive signals. In this case:

- The **BUSY** icon will appear on the display, along with the 📶 icon, which indicates the strength of the incoming signal (the number of bars being proportional to the strength of the signal).
- The device which silences the audio in the absence of signals (squelch) will automatically disable. If reception happens to be broken, try to use the monitor function as described in par. 5.5.

5.4.b Transmission

The **PTT** (push to talk) button is located on the top left of your Ocean. To transmit:

1) Ensure the channel you've selected is not a reception-only channel (if it is, the transmission will be disabled) and that no one else is talking (this will appear on your display as the *BUSY* icon).
2) Hold down the **PTT** button: **TX** will appear on the display, and the 📶 icon will indicate your relative transmission power (the number of bars is proportional to your relative transmission power).
3) Wait a second, then speak in a normal voice, facing the transceiver's microphone at a distance of approx. 5 cm.
4) When you have completed your message, release the **PTT** button: **TX** and 📶 will disappear from the display and the transceiver will return to reception mode.

📄 *Obviously, you can only communicate with stations that are tuned on the same channel.*

📄 *If the BUSY icon appears on the display, but you don't hear anything, you may have accidentally turned the volume to the minimum level.*

5.5 Monitor function

The ★/M (Monitor) button is for temporarily excluding (opening) the circuit which silences the receiver in the absence of signals (squelch) in order to listen for extremely weak signals that can't open the squelch stably. In this mode, you avoid listening to broken communication.

To activate the monitor function, hold down the ★/M button until you hear background noise (or else a weak signal). Release the ★/M button when you have finished listening.

📄 *If you wish to keep the squelch open for longer periods without holding down the button, press the ★/M button for at least 5 seconds, until you hear two acoustic sounds (beeps), then release the button. The squelch will remain open until you briefly press the ★/M button again.*

5.6 Selecting transmission power

The transmission phase absorbs the most energy. To extend the battery duty, you can select low transmission power when transmitting over short distances. To do this, briefly press the **HI/LO** button: *Low* will appear on the display (low power is approx. 0.5 W). If you wish to transmit or receive over long distances or with weak signals, press the **HI/Lo** button again: *Low* will disappear and high power will be selected (approx. 2W).

📄 *The transceiver is factory preset on high power.*

5.7 Instant recall of channel 16

Channel 16 is used as the universal marine channel for emergency communication. Your transceiver is equipped with a button that provides instant access to this channel. To instantly recall channel 16, press the **ch 16** button. Channel 16 will be selected (regardless of the usage mode selected, except for scanning). To return to the channel selected previous to channel 16, press the **ch 16** button again.

5.8 Display lighting

If environmental light is insufficient for reading the display, you can activate the backlighting for 10-second intervals by briefly pressing the ★/M button. If you wish to deactivate backlighting before the end of this pre-set time, press the ★/M button again.

📄 *Display lighting absorbs additional battery energy. Try to use this feature in moderation.*

5.9 Keypad lock

During transport, you can block the transceiver's keypad in order to avoid accidental activation of the functions. To activate the keypad lock, hold down the 🔑 HI/LO button until the ⊶ symbol appears on the display. This function deactivates all the buttons on the front of the transceiver. Pressing one or more buttons when in this mode will cause an audio signal of thee consecutive beeps. To deactivate the keypad lock and therefore reactivate the function keys, follow the description above once again.

5.10 Use of CALL button

The **CALL** button is used to make a call on the channel currently selected and is composed of four two-tone audio sequences (bleeps). To use this function, briefly press the **CALL** button. The radio will go into transmission mode for approx. two seconds, emitting a call. While this is happening, 🔔 (call) and **TX** (transmission) will appear on the display, as well as the 📶 indicator, showing your relative transmission power.

📄 *Two-tone calling is a special function of Ocean. As such, your party may not recognize it. We suggest that you ensure your party is aware that you will be activating this function before use.*

5.11 Clock mode

This mode allows the user to see the current time on the LCD display. To activate this, briefly press the **CLOCK** button.

5.11.a Setting the time

1) In clock mode, briefly press the ◄┘ button. The hour will begin to flash on the LCD display.
2) Press the ▲ or ▼ buttons to change the hour.
3) Briefly press the ◄┘ button again. The minutes will begin to flash on the LCD display.
4) Press the ▲ or ▼ buttons to change the minutes.
5) Briefly press the ◄┘ button again. The seconds will begin to flash on the LCD display.
6) Press the ▲ or ▼ buttons to change the seconds.
7) Briefly press the ◄┘ button to set the time and return to clock mode.
8) To exit the clock mode, briefly press the CLOCK button.

📄 *While in this mode, you can still transmit normally using the **CALL** or **PTT** buttons. When this happens, the LCD display will automatically switch to its regular operating screen, returning to clock mode as soon as transmission is terminated.*

5.12 Chronometer mode

This function activates the use of your transceiver's built-in chronometer (values to the hundredths of a second). To activate this:

1) Press the **STW** (Stop Watch) button: **StopWatch** and **00**$^{:00:00}$ will appear on the display.
2) To activate the chronometer, press the ▲ button. At this point, you can:
   - View the elapsed time, by pressing the ▼ button. To exit the elapsed time viewing, press the ▼ button again.
   - Stop the chronometer by pressing the ▲ button. To reactivate the chronometer from its stopping point, press the ▲ button again. Or else press the ◄┘ button if you wish to restart the chronometer at **00**$^{:00:00}$.
3) To exit the chronometer function, press the **STW** button again.

📄 *When the chronometer function is active, Ocean is still able to receive calls, but the display will continue to show the chronometer's progress. When this happens, you can transmit normally using the **CALL** or **PTT** buttons, or using VOX mode. The display will switch to the regular operating screen, but will continue to clock the chronometer's progress. To return to the screen after terminating transmission, press the **STW** button again.*

📄 *When the chronometer function is active, if you press the **CALL** button to send a call, the radio will show the main screen during the call but will continue to clock the chronometer's progress, which will appear on the display immediately afterwards.*

6   ADVANCED FUNCTIONS (F BUTTON)

The **F** button enables the user to access the transceiver's advanced functions and to change settings as required: selecting the band (INT, USA, or CANADA), VOX mode, memory programming and recall, channel scanning, etc. In general terms, to recall/change settings for various functions:

1)   Press the **F** (Function) key repeatedly to scroll through the available functions, until you find the one you want.

2)   Press the ▲ or ▼ buttons to set the function currently on the screen. Depending on the function, you can select **On** (function activated), **Off** (function deactivated), or scroll through the various values (e.g., from **01** to **06**).

3)   To store a changed setting, press either the ↵ or the **F** button. Both will perform the same operation, the difference being that the ↵ returns the radio to Standby, while **F** selects the next function.

📄   *After following step 1, you must make any changes you wish to within 10 seconds of each button pressing, otherwise the radio will return to standby and will storing with the current settings.*

6.1   Activating/deactivating keypad tones

Keypad tones are emitted each time a button is pressed in order to reduce the likelihood of accidentally pressing a button twice. This function can be deactivated if you prefer the radio to be silent. To activate or deactivate the keypad tones, refer to the steps outlined below:

1)   Repeatedly press the **F** key until the 🎵 icon begins flashing. Below this icon, the current setting will also flash (**On** = tones activated or **Off** = tones deactivated).

2)   Press the ▲ or ▼ buttons to change the keypad tone to **On** or **Off**.

3)   Press the ↵ button to confirm the setting change and return to Stand-by, or press the **F** key to access the following menu setting.

6.2   VOX mode

VOX (Voice Operated eXchange) enables the user to activate hands-free transmission (without pressing any buttons) simply by speaking into the microphone. As such, the user is able to rest the radio on a nearby surface and speak a short distance from the microphone, communicating hands-free.

VOX functions best with the optional microphone accessories available, which connect to the **SPK** and **MIC CHG** jacks. Using these accessories, the microphone will always be close to the user's mouth, and apart from the convenience of being hands-free, this will give the user an even greater range of movement, especially with the radio clipped onto the user's belt.

📄   *VOX is equipped with two settings (sensitivity and delay), which allow for optimal use, as explained below.*

❗   **If you use an external microphone, once you have finished using it, do not forget to replace the rubberized protective flap on the radio.**

6.2.a   Activation/deactivation of VOX mode

1)   Repeatedly press the **F** key until the **VOX** icon flashes. Below this icon, the currently selected setting will appear (**On** = VOX activated or **Off** = VOX deactivated).

2)   Press the ▲ or ▼ buttons to change the VOX mode to **On** or **Off**.

3)   Press the ↵ button to confirm the setting change and return to Stand-by, or press the **F** key to access the following menu setting.

6.2.b   Setting VOX sensitivity

Adjusting the VOX sensitivity avoids the likelihood of the radio going into transmission mode because of environmental noise. As such, it should be adjusted to the minimum level necessary to activate transmission by voice.

1)   Repeatedly press the **F** key until the **LE** (sensitivity level) icon flashes. The **VOX** icon and the sensitivity level currently selected (from **01** to **06**) will flash on the display.

2)   Press the ▲ or ▼ buttons to select the desired level (**01** = more sensitive, **06** = less sensitive).

3)   Press the ↵ button to confirm the setting change and return to Stand-by, or press the **F** key to access the following menu setting.

6.2.c Setting VOX delay

During transmission with VOX, a delay avoids the possibility that, during short pauses in communication, this function does not return the radio to reception mode. As such, this function should be set at the minimum level necessary to guarantee this.

1) Repeatedly press the **F** key until the **dL** (delay) appears. The **VOX** icon and the delay currently selected (from **01** to **06**) will flash on the display.

2) Press the ▲ or ▼ buttons to select the desired delay time. Six delay values are available, in increments of 0.5 seconds (**01** = 0.5 seconds, **06** = 3.0 seconds).

3) Press the ⏎ button to confirm the setting change and return to Stand-by, or press the **F** key to access the following menu setting.

6.3 Scanning functions

6.3.a Scanning all channels

Ocean can automatically search for signals throughout the marine band by scanning, i.e. selecting the channels in rapid sequence. When a signal is detected, the scanning pauses on that channel and remains blocked until the signal ends (for a maximum of five seconds), giving the user a chance to respond to a call, if necessary, before Ocean automatically begins scanning again. To begin scanning, follow the steps outlined below:

1) Repeatedly press the **F** key until the **Scan** icon and the currently selected channel begins flashing on the display.

2) Press the ▲ or ▼ buttons to activate scanning. The transceiver will begin to explore the marine band channels.

3) The transceiver will continue channel scanning until it picks up a transmission. When this happens, the transceiver temporarily halts scanning and remains tuned on that channel for about 5 seconds. During this time, you have a few options:

   - *If the communication does not interest you,* wait for 5 seconds or press the ▲ or ▼ keys to begin channel scanning again.

   - *If the communication interests you,* you can halt scanning by briefly pressing the ⏎ or **PTT** buttons.

4) To exit the scanning mode and return to Stand-by on the currently selected channel, press the ⏎ button, or press the **F** button to access the following menu setting.

▤ *Scanning can also be executed on commonly-used channels only. For further details, refer to par. 6.5.c.*

6.3.b Activating Dual Watch

The Dual Watch function allows you to virtually watch simultaneously two channels of your choice by executing a scan on the two channels. To select the Dual Watch function, follow the steps outlined below:

1) First, select a channel.

2) Repeatedly press the **F** key until the **DW** icon flashes on the display.

3) Using the ▲ and ▼ buttons, select a second channel that you wish to scan. After approx. one second, the transceiver will begin to execute a scan on the two channels.

4) When the transceiver detects a transmission on one of the two channels, Dual Watch temporarily pauses, remaining tuned for 5 seconds on the corresponding channel, giving the user a chance to respond a call. After this pause, the transceiver begins scanning again.

5) If Dual Watch pauses on a channel on which you would like to send a transmission, press the **PTT** button. This will deactivate Dual Watch, allowing you to communicate normally. To reactivate Dual Watch, follow the steps outlined above.

6) To exit Dual Watch mode and return to normal reception on the currently selected channel, press the ⏎ button, or press the **F** button to access the following menu setting.

6.4 International, U.S.A., and Canada bands

Your transceiver is equipped with three types of bands on the VHF marine band:

- **I** (International) – used in most of Europe and other parts of the world
- **U** (USA) – used in the United States of America
- **C** (Canada) – used in Canada

These bands ensure correct functioning of your transceiver, depending on the part of the world you are in. Most channels are identical on all three bands, but there are key differences.

! **It is your responsibility to select the proper band (using the optional PRG-OCEAN programmer); otherwise you may cause interference with other services or not be able to communicate at all.**

6.5 Memory channels

The transceiver is equipped with 20 memories (from **01** to **20**) into which commonly-used channels can be inserted. Once stored, the channels can be recalled and scanned rapidly.

6.5.a Programming of memory channels

To store channels in the memories, follow the steps outlined below:

1) Repeatedly press the **F** key until the **Mem** icon flashes on the display below the small memory number (from 01 to 20). The channel currently selected will also begin to flash (large numbers), with the band (**I**, **U,** or **C**) viewed to the top left of this channel selection – ref. par. 6.4.

2) Press the ▲ or ▼ buttons to select the memory number desired.

3) Press the **F** button again. Only the **MEM** icon and the band icons will flash.

4) Press the ▲ or ▼ buttons to select the channel you want to store.

5) Press the ⏎ button to store the channel.
   - To program another channel – repeat steps 1) to 5).
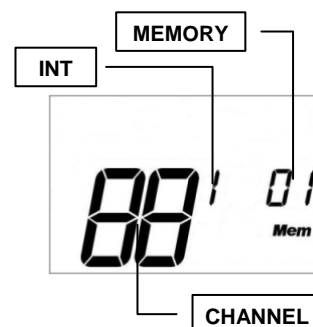
6.5.b Memory recall

To select a stored channel, follow the steps outlined below:

1) Repeatedly press the **F** key until the small memory number (from 01 to 20) and corresponding stored channel appear on the display.

2) Select the stored channel and push the PTT, your radio will operate on that channel.

3) To exit this menu and return in "Stand-by" mode, press ⏎.

6.5.c Memory scanning

To scan the stored marine channels only, follow the steps outlined below:

1) Repeatedly press the **F** key until the **Mem** and **Scan** icons are flashing simultaneously on the display.

2) Press the ▲ or ▼ buttons to activate scanning. The transceiver will begin scanning only the programmed memories.

3) The transceiver will continue scanning the programmed memories until it picks up a transmission. When this happens, the transceiver will temporarily halt scanning, remaining tuned on that memory channel for about 5 seconds. During this period, you have a few options:
   - *If the communication does not interest you,* press the ▲ or ▼ buttons to begin memory scanning again.
   - *If the communication interests you,* you can halt scanning by briefly pressing the ⏎ button.

4) To exit the scanning mode and return to Stand-by on the currently selected channel, press the ⏎ button, or press the **F** button to access the following menu setting.

6.6 Weather channel (only with the USA band)

This function is available only on the USA band (ref. par. 6.4). In the United States, there are a few channels dedicated to weather information reception (WX). To recall these:

1) Ensure you have selected the USA band.

2) Repeatedly press the **F** button until 🌥 appears on the display with the weather channel number.

3) Press the ▲ or ▼ buttons to select the desired weather channel.

4) To exit the weather channel and return to normal channel reception mode, press the ⏎ button, or press the **F** button to access the next menu setting.

6.7 Automatic weather information warning (detection of NOAA tone)

This function is available only on the USA band (ref. par. 6.4), and allows for monitoring at regular intervals if a pre-selected weather channel emits weather information. When this function is active, during normal functioning (on any USA marine band channel), the transceiver will execute periodic controls on the pre-selected weather channel to detect a particular signal (NOAA tone at 1050 Hz) emitted at the same time as weather information. When Ocean detects a

NOAA signal, it will interrupt normal operations and move automatically to the weather channel so you are able to listen to essential weather information.

To activate the automatic weather warning:

1) Select the weather channel you desire monitored, following steps 1 through 3 of par. 6.6.

2) Press the **F** button to access the next menu setting. The ☁ symbol will flash with **Off** (weather warning deactivated).

3) Press the ▲ or ▼ buttons to select the **On** (activated) setting.

4) Press the ↵ to confirm the changed setting. Ocean will return to Stand-by mode and will monitor the pre-selected weather channel at regular intervals.

To deactivate the automatic weather warning, follow the steps outlined above, selecting the **Off** setting.

7   PROGRAMMING AND SELECTION OF PRIVATE CHANNELS

Private channels are only available to authorized users. For further information, please contact your appropriate local authority. To program private channels, you will require the optional "PRG-OCEAN" programmer, or you will need to contact your supplier. Use of private channels is activated in the same way as default VHF channels.

8   CLEANING AND MAINTENANCE OF YOUR RADIO

8.1   Cleaning the radio

Carefully rub the radio using a soft, clean cloth that does not have loose fibers. If the radio is very dirty, slightly dampen the cloth with a mixture of water and a neutral soap.

☝ *Do not use detergents, alcohol, solvents, or abrasives.*

☝ *While cleaning the radio, always keep the rubber flap over the side connectors, the antenna, and the battery well in place. Do not under any circumstances allow the connectors or electrical contacts to get wet.*

8.2   Connectors

When the connectors are not being used, they must be covered with their protective rubber flap.

Attach your radio connectors only to original accessories or those approved by CTE International, otherwise you may damage the radio.

9 TROUBLESHOOTING

Your Ocean is designed to provide you with years of optimal performance. If for some reason problems arise, refer to this chapter before contacting a service centre in your region.

9.1 Reset of functions

If your transceiver experiences a logical malfunction (improper symbols on the display, blocking of functions, etc.), it may not be experiencing a true failure, but rather a problem caused by external factors. For example, it may have an incorrect setting brought on by a noise or spikes in the electrical system during battery recharging. In such cases, you can reset the transceiver to its factory-programmed settings, deleting memories and resetting functions:

1) Turn off the transceiver.
2) Hold down the **F** button, and at the same time, turn on the transceiver; all of the icons and symbols will appear simultaneously on the transceiver.
3) Release the **F** button. All settings will return to the factory-programmed ones. For example, the radio will be reset on the **I** band (International), high transmission power will be selected, etc.

📄 *Before you reset the radio, we suggest you write down all of the settings you have previously entered, as they will be cancelled during the reset.*

9.2 Solution table

Problem	Possible Cause	Solution	Ref
Ocean does not turn on	The batteries are not charged and/or are not correctly inserted	Ensure the batteries are charged and correctly inserted in the radio	4.3
Ocean turns off as soon as it is turned on	The batteries have lost their charge	If the batteries are alkaline (non-rechargeable), substitute them; otherwise, charge your NiMH batteries.	4.4
Ocean turns on, but does not receive signals	The antenna is incorrectly connected	Check antenna connection at SMA connector	4.1
	The volume is too low	Adjust volume level	5.2
During reception, you hear continual background noise	The monitor function was accidentally left active	Deactivate the monitor function	5.5
You are unsuccessful in establishing contact with your party	Incorrect selection of marine channel or local band	Check your channel and band	5.3 6.4
Reception is broken and/or with noise	Signal is extremely weak	Temporarily deactivate squelch using the Monitor function	5.5
	Your party is too far away and/or transceiver antenna is shielded by obstacles in the direction of your party	Move closer to your party and/or move the transceiver to a less shielded area	-
	Other users are using the same radio channel	Check the radio traffic on the selected channel and change channels if necessary	5.4.a
	Ocean is positioned too close to other interference devices (televisions, computers, transmitters, etc.)	Move Ocean away from the interference devices	-
Battery life is short	Excessive use of display backlighting	Use less display backlighting	5.78
	Excessive use of transmission	Try to reduce transmission times and/or use low transmission power	5.56
	Memory effect is occurring with the batteries	Eliminate memory effect	4.5.a
Logical malfunction (improper symbols on the display, blocking of functions, etc.)	Incorrect setting brought on by electrical disturbance	Reset your radio	9.1

10 TECHNICAL SPECIFICATIONS

GENERAL			
Channels	-	All international, USA, and Canada channels	
Frequency generation	-	PLL synthesizer	
Frequency range	MHz	TX	from 156.025 to 157.425 MHz
	MHz	RX	from 156.300 to 162.000 MHz
Antenna Impedance	Ohm	50	
Power Supply	VDC	from 4.8 to 6 (4 AA rechargeable NiMH or alkaline batteries)	
Operating Temperature Range	°C	from -15° to +55°	
Size (H x L x W)	mm	126 × 55 × 38	
Weight	g	157	
TRANSMITTER			
Output Power (@ 6 VDC)	W	High Power	2
	-	Low Power	0.5
Modulation System	-	FM	
Spurious reduction	-	According to ETSI regulations	
RECEIVER			
Sensitivity (@ 12dB SINAD)	μV	0.35	
Adjacent channel rejection	dB	70	
Audio Output (10% THD)	mW	300	
Intermediate frequencies	MHz	First 21.7	
	KHz	Second 455	
CONNECTIONS			
Socket for external microphone and charger	-	2.5 mm stereo jack	
Socket for external speaker	-	3.5 mm mono jack	
GPS RECEIVER MODULE			
FASTRAX			

Specifications are subject to modification without forewarning.

11 FREQUENCY TABLE

Channel	Frequency (MHz)			
	TX	RX	Mode	Notes
01	156.050	**160.650**	*D*	
02	156.100	**160.700**	*D*	
03	156.150	**160.750**	*D*	
04	156.200	**160.800**	*D*	
05	156.250	**160.850**	*D*	
06	156.300	156.300	S	
07	156.350	**160.950**	*D*	
08	156.400	156.400	S	
09	156.450	156.450	S	
10	156.500	156.500	S	
11	156.550	156.550	S	
12	156.600	156.600	S	
13	156.650	156.650	S	
14	156.700	156.700	S	
15	156.750	156.750	S	*
16	156.800	156.800	S	
17	156.850	156.850	S	*
18	156.900	**161.500**	*D*	
19	156.950	**161.550**	*D*	
20	157.000	**161.600**	*D*	
21	157.050	**161.650**	*D*	
22	157.100	**161.700**	*D*	
23	157.150	**161.750**	*D*	
24	157.200	**161.800**	*D*	
25	157.250	**161.850**	*D*	
26	157.300	**161.900**	*D*	
27	157.350	**161.950**	*D*	
28	157.400	**162.000**	*D*	
60	156.025	**160.625**	*D*	
61	156.075	**160.675**	*D*	
62	156.125	**160.725**	*D*	
63	156.175	**160.775**	*D*	
64	156.225	**160.825**	*D*	
65	156.275	**160.875**	*D*	
66	156.325	**160.925**	*D*	
67	156.375	156.375	S	
68	156.425	156.425	S	
69	156.475	156.475	S	
71	156.575	156.575	S	
72	156.625	156.625	S	
73	156.675	156.675	S	
74	156.725	156.725	S	
75	156.775	156.775	S	*
76	156.825	156.825	S	*
77	156.875	156.875	S	

Channel	INT			
	Frequency (MHz)			
	TX	RX	Mode	Notes
78	156.925	**161.525**	*D*	
79	156.975	**161.575**	*D*	
80	157.025	**161.625**	*D*	
81	157.075	**161.675**	*D*	
82	157.125	**161.725**	*D*	
83	157.175	**161.775**	*D*	
84	157.225	**161.825**	*D*	
85	157.275	**161.875**	*D*	
86	157.325	**161.925**	*D*	
87	157.375	157.375	*S*	
88	157.425	157.425	*S*	

*= Transmission on low power

D = Duplex channels

S = Simplex channels