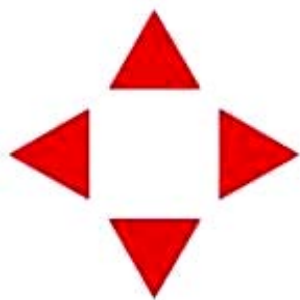


**Micro Device S.r.l.**



**EN-JOY**

JOYSTICK CONTROL SYSTEM

**User's Guide  
En-Joy Model**

**Version 1.0**

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**ATTENTION:**

BEFORE USING THE JCS SYSTEM, READ CAREFULLY THIS MANUAL. IN CASE OF DOUBTS ASK DIRECTLY THE RETAILER OR MICRO DEVICE'S CUSTOMER SERVICE.

MICRO DEVICE S.R.L. DOES NOT TAKE ANY LIABILITY FOR POSSIBLE DAMAGES TO PEOPLE OR PROPERTY COMING THROUGH NEGLIGENCE IN FOLLOWING THE ASSEMBLING INSTRUCTIONS OR COMING FROM INSTALLATIONS MADE BY NOT QUALIFIED TECHNICIANS.

MICRO DEVICE S.R.L. FURTHERMORE DOES NOT TAKE ANY LIABILITY FOR POSSIBLE DAMAGES TO PEOPLE OR TO PROPERTY COMING FROM DIFFERENT OR IMPROPER USES OF THE EQUIPMENT.

**SAFETY PRECAUTIONS**

This manual contains indications, specified by symbols, which can determine damages or accidents if NOT observed



**IMPORTANT:**

Used to draw your attention to important information regarding the right way to install Yacht Controller.



**SUGGESTION:**

Give info to the use of the system at its best.



**ATTENTION:**

Not observing exactly what specified in this section can cause product malfunction or break down.



**DANGER:**

Not observing exactly what specified in this section can cause damages to people and/or damages to property.

THE INFORMATION CONTAINED IN THIS MANUAL CAN BE MODIFIED WITHOUT NOTICE: IF YOU FIND DIFFERENCES OR AMBIGUITY, PLEASE ASK THE RESELLER.

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# Summary

<b>SUMMARY .....</b>	<b>FEHLER! TEXTMARKE NICHT DEFINIERT.</b>
<b>1. GENERAL FEATURES.....</b>	<b>4</b>
1.1. GENERAL FEATURES OF THE TRANSMITTER.....	<b>FEHLER! TEXTMARKE NICHT DEFINIERT.</b>
1.2. GENERAL FEATURES OF THE RECEIVER.....	6
<b>2. TRANSMITTER OPERATIONS .....</b>	<b>7</b>
2.1. WARNINGS.....	7
2.2. ACTIVATION PROCEDURE .....	8
2.3. DEACTIVATION PROCEDURE .....	10
<b>4. MAINTENANCE .....</b>	<b>11</b>
4.1. REPLACEMENT OF THE BATTERIES.....	11
4.2. HOW TO CLEAN THE TX .....	13
4.3. PROBLEMS AND MALFUNCTIONS .....	14
<b>5. TECHNICAL SPECIFICATIONS.....</b>	<b>15</b>
<b>6. WARRANTY.....</b>	<b>FEHLER! TEXTMARKE NICHT DEFINIERT.</b>
<b>7. CE MARK.....</b>	<b>FEHLER! TEXTMARKE NICHT DEFINIERT.</b>

# 1. General features

*"En-Joy" developed by Micro Device Srl is a wireless electronic remote control able to control a boat in its essential parts.*

*With "En-Joy" can be managed with ease, using simple buttons and a comfortable Joystick, the bow and ster thrusters, the right and left engine and any winch.*

*The system is equipped with a microprocessor programmed directly in the Micro Device Laboratory; are so impossible interference with with gangways or anchor radio controls which may be available and in use on the market that, on the contrary use standard electronic components, are impossible.*

*The range of control of Yacht Controller Dual Band's Transmitter is limited to about ten meters and the transmission protocol, makes interference between the same or different systems working in the same area, impossible.*

*Severe tests conducted on different types of boats have highlighted the strength and reliability of the "En-Joy" in the marine environment.*

*In addition, before being marketed, the "En-Joy" has been subjected to numerous quality tests at the factory to ensure perfect operation.*

*"En-Joy" is safe because, by connecting in parallel the existing commands, still leaves their full operation in order to allow, in case of need, an early resumption of the manual control.*



**IMPORTANT:**

Further information concerning the complete system, including the transmitter and the correspondent receiver, are available in the installation manual.

---

## 1.1. General features of the transmitter

On the transmitter there are buttons to control the anchor winch, buttons for the rotation of the boat, buttons for setting the automatic / manual and adjusting the speed of maneuver, the power button on / off and a joystick command.

It is normal that the corresponding buttons of the options not purchased, do not work because the receiver is configured only with the electronic control boards requested. You can in any moment order and install options not initially purchased.

Each transmitter has a unique code programmed in the factory and different from the others, selected from over 65,000 combinations.

The electronics of the transmitter is contained in a silver colored ABS box that combines ergonomics and functionality with a protection degree IP68. Removing the cover on the back of the transmitter, it is possible to access to the batteries for their replacement.



- 1 Anchor 1 up/down buttons.
- 2 Anchor 2 up/down buttons.
- 3 Enabling button to control the anchor winch with related led of activation.
- 4 Maneuvering Joystick.
- 5 Control button to rotate on the left.
- 6 Control button to rotate on the right.
- 7 Control button to rotate on the left.
- 8 Control button to rotate on the right.
- 9 ON-OFF button and engaging.
- 10 Automatic Mode with related led of activation.
- 11 Regulation
- 12 Of the speed of the manoeuvre.
- 13 Red Led for low battery.
- 14 Yellow Leds of communication on band 1 and 2.

Figure 1: Description of the transmitter

## 1.2. General features of the receiver

The receiver is housed in a polycarbonate box, placed inside and out of view of the chosen helm station. The receiver is turned on by a separate switch installed by the technician normally nearby the helm station.

The receiver acquires the commands of the transmitter and activates the functions of the boat accordingly.

If configured by the installer, it is possible to install an individual receiver so that it can communicate with more than one transmitter (not simultaneously).

The system is designed for commanding only marine engines supplied with electronic unit of control. The helm station connected to the receiver, must be activated to control the boat using Yacht Controller En-Joy.

In the event of failure of communication between the transmitter and receiver, the receiver automatically deactivates the outputs and activates the acoustic signal.

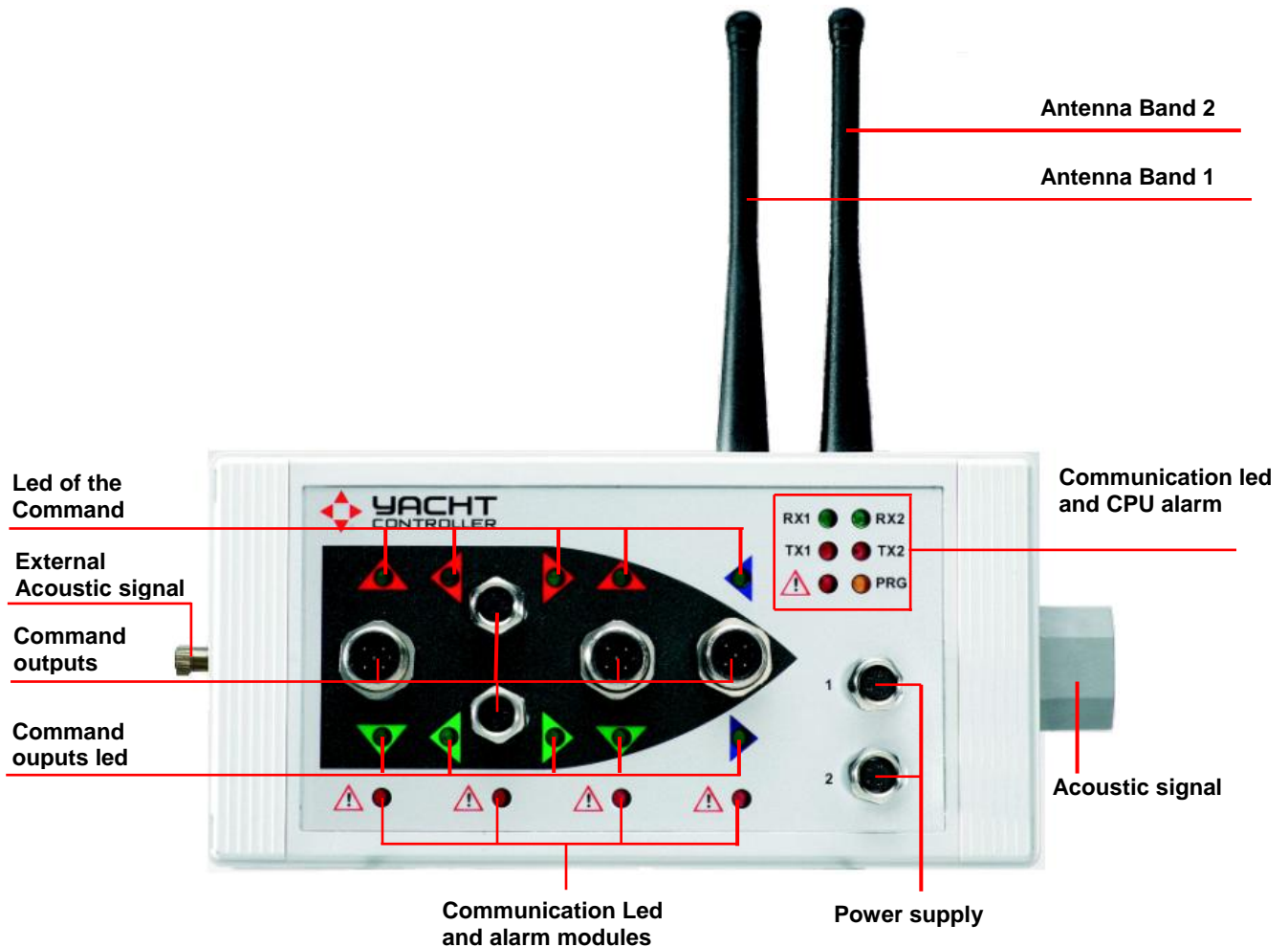


Figure 2: Description of the receiver

## 2. Transmitter operations

The commands on the receiver are activated by the respective buttons and by the joystick placed on the transmitter. The transmitter cyclically transfers the state of the buttons and of the joystick to the receiver. The output of the command will be active as long as the related button is pressed or the knob of the joystick is moved.

In the event of failure of communication between the transmitter and receiver, the receiver is automatically deactivated and activates the acoustic signal.



### IMPORTANT:

It is not possible to command **simultaneously** the same receiver from several transmitters. In fact, the periodic transmissions of the radio controls would cause interferences and improper activation of the commands.

---

## 2.1. WARNINGS



### DANGER:

- The Yacht Controller En-joy should only be used by adults with all the qualifications necessary for the proper operation and management of the boat.
  - The Yacht Controller En-joy transmitter must always be secured outside the range of children on board.
  - Do not use Yacht Controller En-joy if the transmitter has been immersed in the water (see also the paragraph dedicated to the maintenance).
  - During the use of Yacht Controller En-joy, pay the maximum attention that the bow of the boat reproduced on the face of the transmitter, **always coincides** in direction with the bow of the boat. Failure to do so will result in commands exactly contrary to the desired ones.
- 



### WARNING:

- The communication between the transmitter and the receiver can be disturbed by radio-frequency transmission devices in operation nearby.

If such event should occur on both bands, receiver activates the acoustic signal for short periods, signalling the interruption of communication with the transmitter.

**This must not worry because**, thanks to the communication protocol safety, it is not possible that the system accepts wrong commands.

- Also in the nearby presence of other Yacht Controller En-joy, operating at the same time on adjacent boats, improper activations are not possible because the transmitters continuously modify the communication frequency with the receivers.
- **Never use the transmitter if you are not on board the boat which you are commanding. Remember that the abandon of a vessel in Italy and in other Countries is illegal and it is a punishable crime.**

- In the event the LED signals low battery replace **both batteries** within short time.
- 

## 2.2. Activation procedure

- Start the main engines in accordance with the usual procedure.
- Enable the boat helm station to which the **Yacht Controller En.joy receiver** is connected to.



**DANGER:**

IT IS ABSOLUTELY REQUIRED THAT THE ELECTRONIC CONTROL LEVERS REMAIN IN THE NEUTRAL POSITION DURING THE USE OF THE YACHT CONTROLLER SYSTEM.

---

- Activate the Yacht Controller RECEIVER using the proper on/off switch installed on the boat. The activation is signalled by the six communications leds and CPU alarm (see figure 2) for two seconds. After about three seconds, the acoustic signal of the device, will start emitting the acoustic signal of danger which means that the receiver is operating but it has not established yet the radio connection with the transmitter.
- Once turned ON the receiver, the red leds associated to each command module start to flash, signalling the correct operativity of the system. In case of error or malfunction, instead, the red led of the alarm module will remain fixed and not flashing.
- Turn the transmitter ON, by pressing the proper on/off button and holding it down more than three seconds (security time to avoid accidental misuse). The confirmation of the activation is confirmed by activation of the transmission LED.

**ON/OFF switch**  
(engage)



**Figure 3: Transmitter ON/OFF button and Engage button.**

- If the operation has had a good result, to the danger acoustic signal of the receiver takes the place the waiting signal of the engagement. This last signal, characterized by a bip about every two seconds, shows that there is the connection between the receiver and the transmitter and that the system, not yet operational, is waiting for the engagement. During the waiting period for the engagement, the levers and the buttons are not in operations yet.
- To make Yacht Controller En-joy operating, it is necessary to press another time the engage button.
- At this point if the operation has had a good result, the acoustic signal of the receiver stops and the system is completely operating. The two yellow leds will flash signalling to the receiver the transmission on the two bands. It will now be possible to control the engines, the thrusters and the anchor winch, simply pressing the corresponding levers and buttons switches of the transmitter.



- Every activation of the outputs is signalled by the lighting of the correspondent green leds associated to each of the command modules on the receiver.



**WARNING:**

From now on, the system is operating. You must pay the maximum attention, because the involuntary pressure on any of the lever or button switches, will cause the activation of the related command output.

---

- When the transmitter is OFF, on the receiver the red alarm led is fixed and the acoustic signal is activated. Contrarily, in presence of a correct receipt from the transmitter, the red led of alarm switches off, while the green leds of receipt RX1 and RX2 flash. The acoustic signal of the receiver has four states of operation as illustrated in the following chart.

Type of acoustic signalling	State of the receiver	State of the outputs
Continuos	Lack of reception from the transmitter	Outputs deactivated
Bip every two seconds	Correct reception from the transmitter but waiting for the engagement.	Outputs deactivated
Absent	Correct reception with engagement.	Activated
A bip continuous bip of 5 seconds followed by a variable number of bips.	Receiver on alarm (see chapter "Operational problems") in the installers' manual.	Deactivated the output of the function in alarm, activated the others.



**IMPORTANT:**

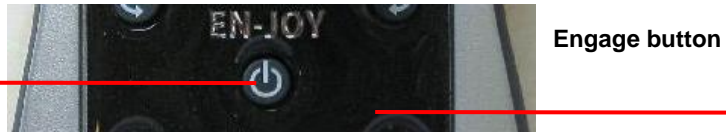
The transmitter automatically turns OFF after approximately four minutes from the last pressure of any lever switch.

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## 2.3. Deactivation procedure

- Turn the transmitter OFF by pressing the proper button until all leds switch ON (security time longer than 3 seconds to avoid accidental misuse). The confirmation of the deactivation is given by the switching OFF of the leds and by the activation of the acoustic signal of the receiver, caused by the lack of communications between the transmitter and receiver.

**ON/OFF switch  
(engage)**



**Figure 4: ON/OFF switch of the transmitter.**

- Deactivate the receiver by pressing the appropriate ON/OFF switch installed on the boat by the installer..



**WARNING:**

In emergency it is possible to deactivate the Yacht Controller receiver pressing the ON/OFF switch installed on the boat without turning the transmitter OFF.

## 4. Maintenance

### 4.1. Replacement of batteries

When the battery discharge LED flashes, it is necessary to replace within two/three hours of operation both batteries of the transmitter. It's a good rule to keep always on board three first quality alkaline batteries of 1,5V type AAA (LR06).



**DANGER:**

Before working on the transmitter, make sure that the receiver is OFF. Accidental pressure on a transmitter switch could in fact activate a boat function and cause a dangerous situation.

---

*To access the batteries, remove the back cover of the transmitter unscrewing the screws*



**Figure 5: Replacement of batteries.**

Once the cover is removed, extract the old batteries and replace them with new ones, which must be of the type indicated at the beginning of this paragraph, paying attention to the polarity indicated on the back of the cover.



**WARNING:**

Do not modify the position of the dip-switch placed under the battery because configured for the options onboard.

---

Check if the waterproof gasket is ok. Replace it if damaged to avoid that the electronics of the transmitter has damages in case of washing or fall in water.

Once finished screw the cover again.



**WARNING:**

- This device contains batteries. Attention: exhausted batteries must be discarded in accordance with local and federal regulations.
  - In the event the batteries have had some leakage, clean it up and replace all them immediately, taking care to properly clean your hands to avoid skin problems.
-

## 4.2. How to clean the transmitter

After using your Yacht Controller Dual Band, remove any salt residue by wiping with a soft cloth using fresh water. **ALWAYS avoid soaking it.**

In case the transmitter has fallen into salt water, immediately turn OFF the receiver following the procedure described in this manual. Once the transmitter is recovered, remove the back cover and remove the batteries. If salt water has entered inside the transmitter dip it momentarily in distilled water (or in lack of this, pure water) to remove salt residuals. Dry the transmitter using a hair-dryer (or, in the sun ) until all moisture is completely evaporated.

Before replacing the batteries, check that everything is absolutely dry, otherwise short circuits may occur that would irreparably damage the transmitter.



**WARNING:**

**If the transmitter is turned on when it falls into the water it may have irrevocable damage. Before using it again TEST IT COMPLETELY TIED UP AT DOCKSIDE OR IN A SECURE AREA.**

**If you notice ANY anomalies, contact the retailer or Micro Device Customer Service.**

---

## 4.3. Problems and malfunctions

This paragraph describes a series of problems and malfunctions which could happen in using the Yacht Controller Dual Band system, the possible cause, and possible solutions to the problem. For further assistance please contact your installer or Micro Device.

Problem	Possible cause	Remedy
The receiver does not turn ON.	The control station of the boat to which the Yacht Controller receiver is connected to has not been activated.	Enable the control station and turn ON the switch of the Yacht Controller receiver.
	The button of switching ON has not been turned ON.	With the transmitter switched OFF, activate the the button of switching ON and wait for the acoustic signal as confirmation of the operativity.
	The tension does not arrive to the receiver.	Check (or ask the installer to check) that the receiver has power supply. Verify in this order: - The presence of the tension of the battery. - The possible presence of broken fuses. - The operation of the switching on button.
The transmitter does not turn ON.	The tension does not arrive to the transmitter.	Verify in this order: - That the batteries and the back cover are inserted in their right way. - The power supply of the batteries.
The acoustic signal of the receiver is always ON.	The transmitter is turned OFF.	Turn the transmitter ON by keeping the button pressed at least three seconds.
	None of the codes of the receiver corresponds to the one of the transmitter.	See the Installer's manual or ask your Installer.

<b>Problem</b>	<b>Possible cause</b>	<b>Remedy</b>
The acoustic signal of the receiver emits intermittent signals.	The wireless transmission is interfered by radio-frequency sources nearby	<ul style="list-style-type: none"> <li>- remove, if possible, the source of disturbance.</li> <li>- if the functionality of the system is compromised, take manual control at the helm station.</li> </ul>
	The distance between the receiver and the transmitter has exceeded the signal range.	<ul style="list-style-type: none"> <li>- go closer to the receiver to reduce the distance between the two devices.</li> <li>- the range of communication of the transmitter also depends on the charge of the batteries. Check the charge.</li> </ul>
The transmitter activates the low batteries signal LED.	Batteries are near exhaustion.	Replace the batteries within short time.
The transmitter has fallen in water.		Remove batteries immediately and proceed as described in the paragraph dedicated to the maintenance

If you encounter problems which are not contemplated in this table or if the possible malfunction is repeated, contact the Dealer Micro Device's Customer Service directly

## 5. Technical specifications

<b>Power:</b>	3 alkaline 1,5 batteries AAA (LR03) type
<b>Cover:</b>	In ABS with protection degree IP68.
<b>Number of channels:</b>	10
<b>Transmission code:</b>	16 bit digital
<b>Dimensions (LxAxP)</b>	70 x 123 x 43 mm
<b>Weight:</b>	with batteries in, 145 g
<b>Power of transmission:</b>	10mW (30-50 mt. max)
<b>Frequencies:</b>	433.92 and 868.3 MHz
<b>Operating temperature:</b>	from 0°C to +50°C



## 6. Warranty

Each Yacht Controller Dual Band system is warranted for 24 months, as from the date of sale to the first user . The warranty on the Micro Device S.r.l.'s devices is for all the possible defects of material and breakdowns not caused by the customer.

Regarding the installation and the possible maintenance operations, these are responsibility of the installer. This warranty explicitly does not include faults due to maintenance, improper installation and customer misuse.

The warranty is given on the following conditions: the equipment is effective for all the possible faults of manufacture, material and for breakdowns not caused by the customer. All breakdowns imputable to the customer or due to force majeure, natural events and all faults caused by improper use of the equipment, are not covered by the Manufacturer's warranty.

Manufacturer's Warranty is valid in accordance with following conditions:

- Installation must be made by a certified installer.
- Electronic Components must be integral, not disassembled, tampered or modified in any manner.
- Warranty excludes equipment damaged by water.
- Defective equipment must be returned properly packaged to avoid shipping damage and complete of all the accessories.
- Package must include a brief description of the problem.
- Package must clearly show, near the address of the sender, the Number of Authorization to the Re-entry "NAR" given by Micro Device S.r.l. Phone. +39.02.6131001.
- Return transportation charges are at the expense of the Sender
- All the packages sent without "NAR" or at the manufacturer's expense, will be refused.
- The Manufacturer's responsibility is limited to the substitution or repair of equipment which, in its sole judgment, has a manufacture defect.
- Purchaser agrees that the manufacturer and and seller's liability for any accident and/or damage to property and/or personal injury which occurs during the use of this equipment is solely limited to the purchase price of this equipment regardless of the incident or circumstances.
- The repair or replacement of equipment, during the warranty period, does not have the effect of extending the original warranty period.
- These conditions do not intend to void the effects of laws or rules for protection of the customer.
- "Yacht Controller Dual Band" can be subjected to changes without warning: if differences or ambiguity were found, consult the retailer.

## 7. CE Mark



YACHT CONTROLLER EN-JOY IS A SYSTEM IN COMPLIANCE WITH THE FOLLOWING CE DIRECTIVES:

### DIRECTIVE R&TTE

- EN 300 220-1 V2.1.1
- EN 301 489-1 (V1.8.1) + EN 301 489-3 (V1.4.1)
- EN 60950-1 (2006)

### ELECTROMAGNETIC COMPATIBILITY DIRECTIVE

- EN 60945 (2002)