JOPIX MARINE

VHF/FM HANDHELD MARINE TRANSCEIVER

INSTRUCTION MANUAL

JOPIX MARINE 515P

Approved by the Spanish Marine Authorities no.: 54.0135

English

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1.- LEGAL INFORMATION:

For the use of this equipment on fishing boats, an administrative authorization or license granted by the Marine Authorities is required, for more information, consult your salesperson.
Countries where this equipment can be used:

AT	DE	FR	IS	MT	SE
BE	DK	GB	IT	NL	SI
CH	EE	GR	LT	NO	SK
CY	ES	HU	LV	PL	TR
CZ	FI	IE	LU	PT	

This equipment complied whit Directive 2012/19/EU on waste electrical and electronic equipment (WEEE). This means that this product must be disposed of at a designated collection point for the recycling of waste electrical and electronic equipment, with the intention of being either recycled or dismantled in order to reduce any impact on the environment. For more information, please contact your distributor, salesperson or regional administration.
Electronic products that have not been disposed of in this way are potentially dangerous for the environment and public health due to the possible presence of dangerous substances.

This equipment complied with Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS). The restricted substances are: Lead (<0.1%); Mercury (<0.1%); Hexavalent chromium (<0.1%); PBB (<0.1%); PBDE (<0.1%); Cadmium (<0.01%).

● This instruction manual has been created with the intention of supplying as much information as possible. PIHERNZ COMUNICACIONES, S.A. is not responsible for any omissions or any errors in printing or translation.

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2.- INTRODUCTION:

● PIHERNZ COMUNICACIONES, S.A. he thank you for purchasing this VHF handheld marine transceiver, you will find a design and professional use in this equipment.
● Read this manual carefully and completely way before using the transceiver.
● It is a multifunctional marine radio and well-designed on IMO (International Maritime Organization) resolution.
● As adopting advanced waterproof technology, the transceiver is with good waterproof and floating functions.

3.- CAUTION:

● The power supply on this transceiver is DC 7.4 V, please use the supplied Li-ion battery pack.
● This transceiver should be charger by supplied adaptor.
● Do not expose the transceiver to direct sunlight for a long time, do not place it in environment or near any heating devices with temperatures below -20ºC or above + 55ºC.
● If it emits smoke or strange odours, remove the battery from the transceiver immediately and contact us or the local dealer or Technical Service.
● Cannot be transmitted without antenna installed, or the transceiver will be damaged.
● Do not operate the transceiver and power off in flammable, explosive environment.
● keep the transceiver at least 1 meter away from your vessel´s magnetic navigation compass.
● The transceiver meets IP-67 requirements for waterproof protection. However, once the transceiver has been dropped, waterproof protection cannot be guaranteed because of possible damage to the transceiver´s case or the waterproof seal.
● Make sure transceiver antenna, earphone jack cover and battery cover are dry before attachment. Exposing the inside of the transceiver to water will result in serious damage to the transceiver.
● Do not put the battery in the water or contact with wet material. Do not short circuit the battery terminals.

4.- RECOMMENDATION:

Clean the transceiver thoroughly with fresh water after exposure to saltwater, and dry it before operating. Otherwise, the transceiver´s keys and control components may become unusable due to salt crystallization.

Note:
- Do not submerge the transceiver in water if there is any reason to suspect the waterproof protection may not be effective. For example, in cases where the battery cover or DC jack cap rubber sea is damaged, the transceiver/battery cover/DC jack cap is cracked or broken, or the transceiver has been drooped, or when the battery cover, antenna or DC jack cap are detached from the transceiver.

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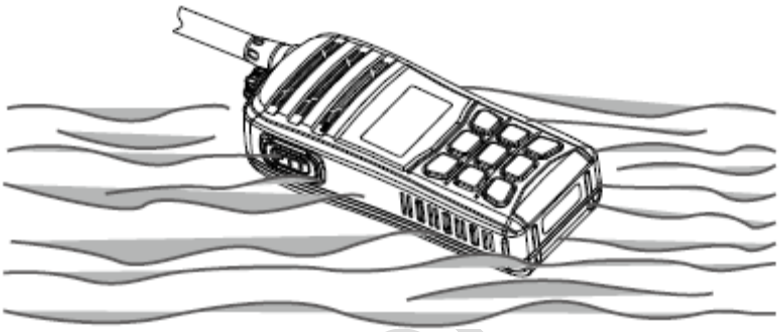
5.- FEATURES:

5.1.- WATER RESISTANT PROTECTION:

The water-resistant protection of transceiver means IP67 requirements can be 1 meter depth in water for 30 minutes. Make sure supplied battery, microphone jack cover, antenna, etc. are used and well installed before put into water.

5.2.- FLOATS ON WATER:

● The transceiver can be floated when fell into water.
● The transceiver floats in fresh or salt water even when the supplied accessories, including battery, belt clip, antenna, are attached.
● When a third-party battery pack, belt clip, antenna, etc. are used, it may sink.



6.- SUPPIED ARTICLES:

Carefully unpack the transceiver. We recommended that you identify items listed in the following table before discarding the packing materials. If any item are missing of have been damaged, please contact dealer immediately.

Item	Quantity
Handheld transceiver	1
Antenna	1
Lion battery pack	1
AC/DC adaptor	1
Belt clip	1
Handstrap	1
User´s manual	1

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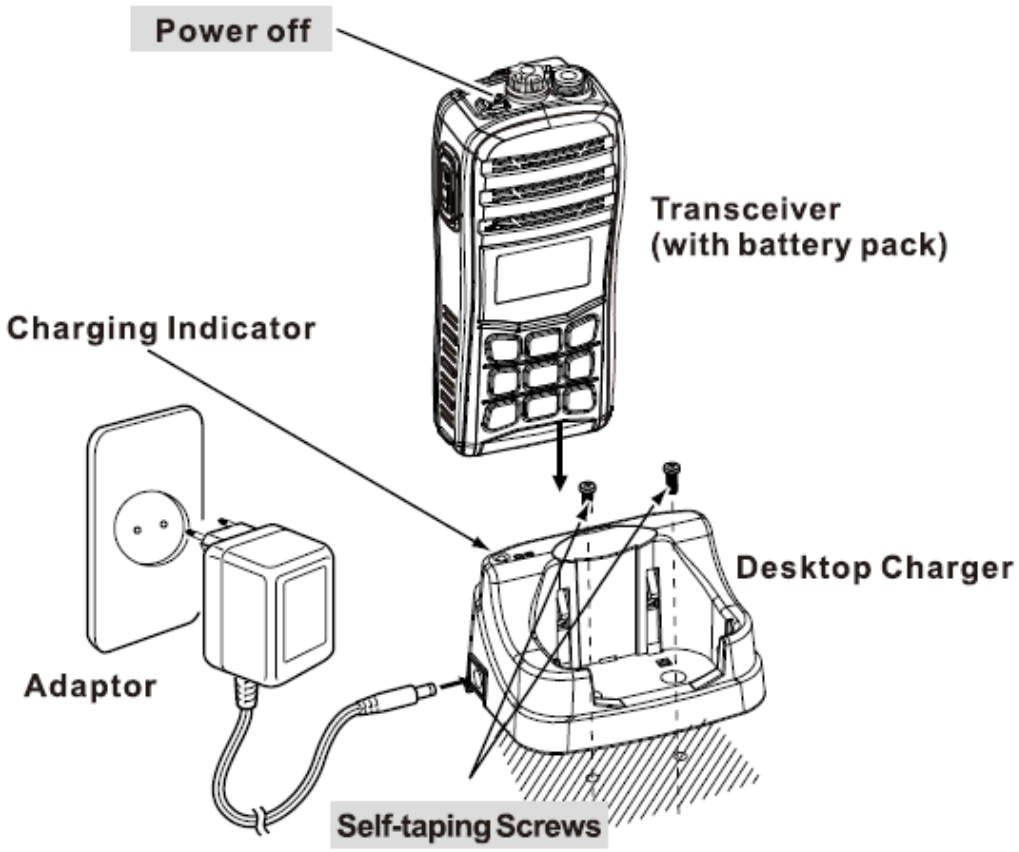
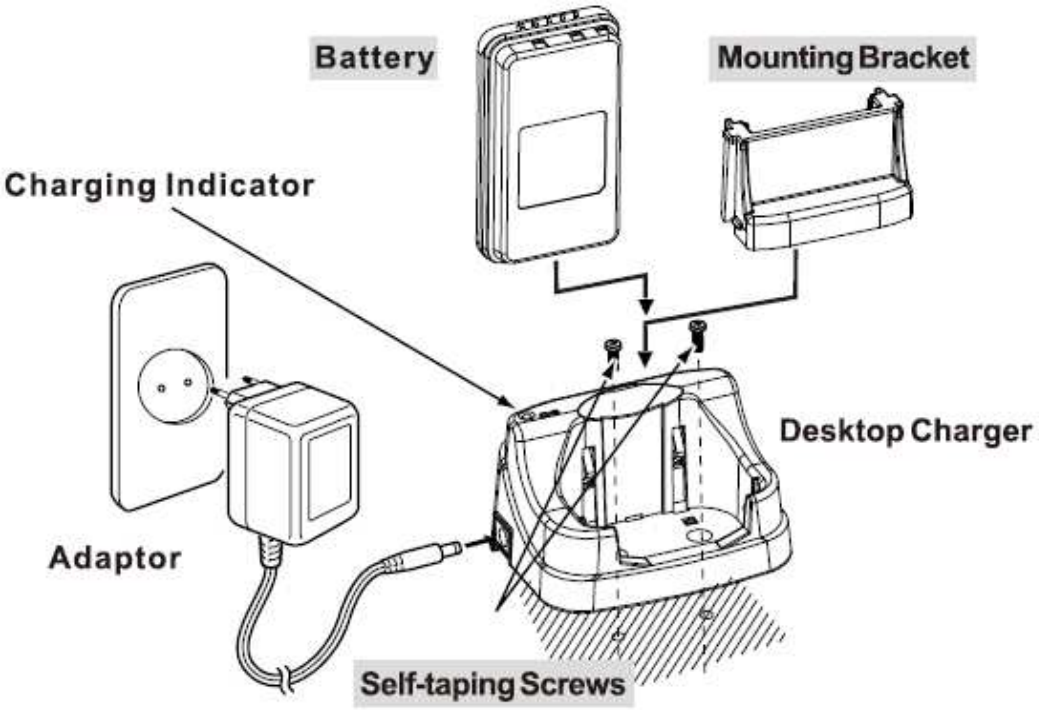
7.- PREPARATION:

7.1.- CHARGING THE BATTERY PACK:

Charging the transceiver with battery pack:
1. Connect the adaptor output line with desktop charger, and connect the adaptor to AC wall outlet.
2. Charging by inserting the transceiver with battery into desktop charger, confirm well connected.



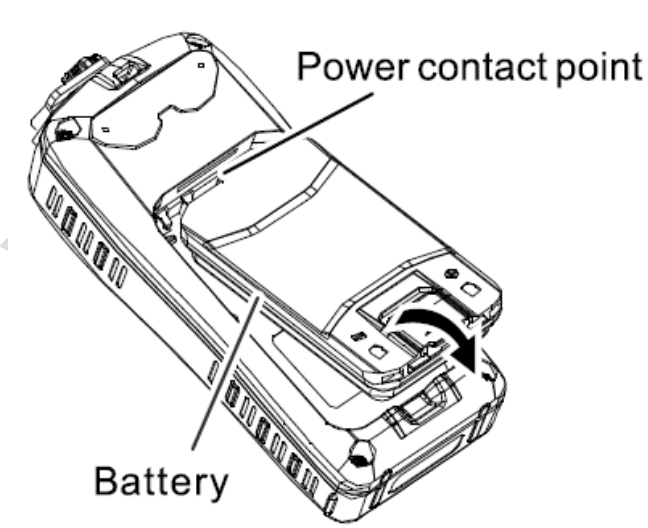
Charging the battery pack separately:
1. Connect the adaptor output line with desktop charger, and connect the adaptor to AC wall outlet.
2. Install the battery bracket into charging groove of desktop charger.
3. Insert single battery pack into desktop charger.

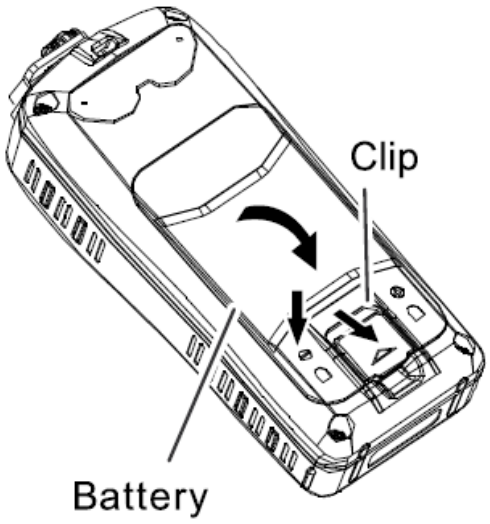


Notes:
- You can fix the desktop charger on the table by configured self-tapping screw.
- Power off the transceiver before charging.
- Charging indicator lights red while charging.
- Charging indicator lights green while full charge.

7.2.- INSTALL / REMOVE THE BATTERY PACK:

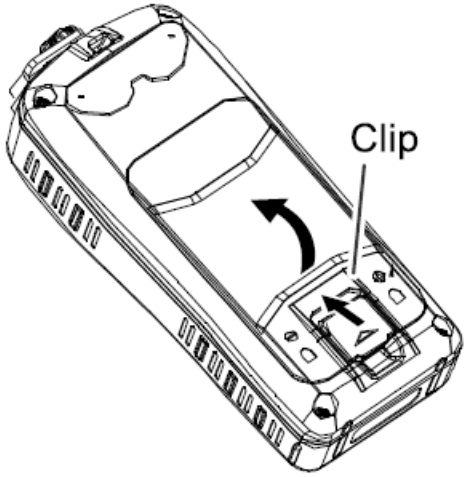
To insert the battery pack:
1. Aim battery terminal on power contact point of transceiver, push battery into groove.
2. Press battery downward and make sure battery clip into groove.
● If the battery cover not fixed well, it may cause water leakage.

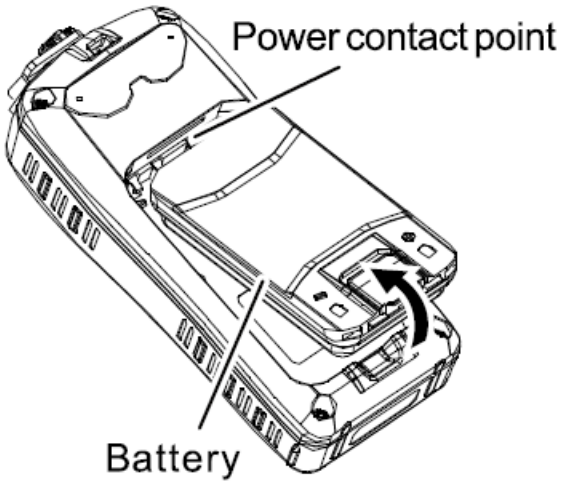




To remove the battery pack:
1. Push battery clip upward.
2. Lift upward of battery bottom from groove to remove the battery pack.

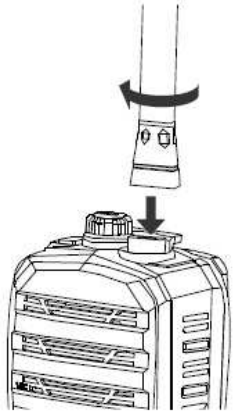
Notes:
- Do not short circuit the battery terminal or throw it into fire.
- Do not disassemble battery shell by yourself.





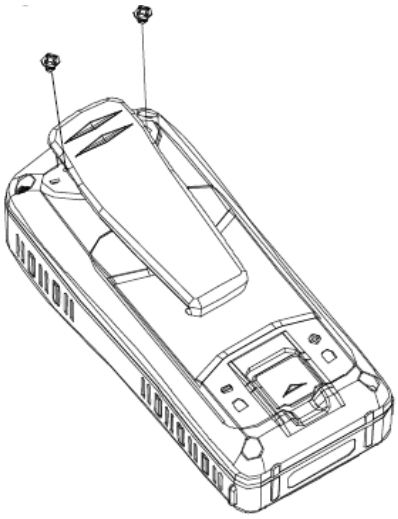
7.3.- INSTALL / REMOVE THE ANTENNA:

1. Connect the supplied fixable antenna to the antenna connector, rotate it clockwise.
2. To remove it, rotate it anti-clockwise.



7.4.- INSTALL THE BELT CLIP:

Attach the belt clip to rear cover, and ensure screw holes are align, screw tightly using screw driver.



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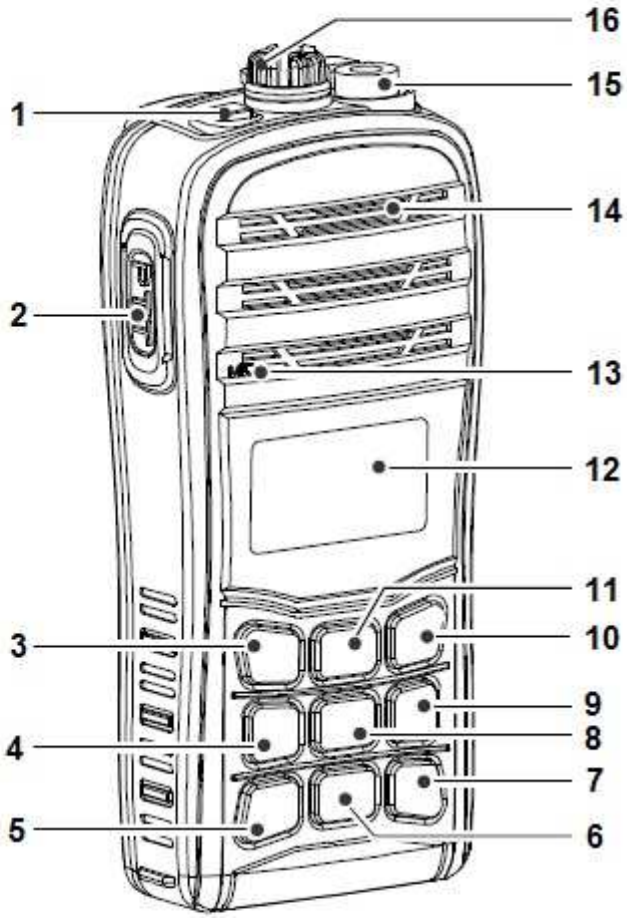
8.- GETTING ACQUAINTED:



1. Power key [⏻]:

● Hold down this key over 1.5 seconds; to power on/off transceiver.

2. [PTT] key:

● Hold down to transmit; speak with normal voice tone.
● Release to receive.

3. [CH16] / [C] key:

● Push to select channel 16.
● Hold for 1.5 seconds to select the call channel (factory default: channel 9).
● Transceiver factory default call channel is channel 9.
● When the call channel is select, hold for 3 seconds to enter the call channel programming mode.
● While in the set mode, push to return to the normal operation mode.

4. Volume key [VOL] / [MUTE]:

● Press this key, then [▲] / [▼] to adjust volume.
● Hold for 1.5 seconds, to open mute function.

5. [SCAN] / [DUAL] key:

● Push to start or stop scan mode (including normal and priority scan).
● Hold for 1.5 seconds to enter the Dual/Tri-watch mode.
● Push to exit the watch mode.
● Hold this key and [H/L] key for 1.5 seconds, to activate the AquaQuake function.

6. [▼] key:

● Push to select an operation channel in normal mode.
● While in the Set mode, push to select the setting or value of an item.

7. [H/L] / [Lock] key:

● Push to select the high or low output power.
● Hold for 1.5 seconds to turn the lock function ON or OFF.

8. [▲] key:

● Push to select an operation channel in normal mode.
● While in the Set mode, push to select the setting or value of an item.

9. [SQL] / [MONI] key:

● Press this key, then press [▲] / [▼] key to adjust squelch level.
● Hold for 1.5 seconds to manually open squelch and active the monitor function.
● While hold this key, press [⏻] key to turn ON the power and enter the set mode.

10. [FAV] / [TAG] key:

● Hold this key, then press [▲] / [▼] key to sequentially select the favorite/teg channels, while ignoring untagged channel.
● Hold for 1.5 seconds to set or clear the TAG for the display channel.
● While holding this key, press [⏻] key to power on to clear or set all TAG channels in the selected channel group.

11. [CH] key:

● Press this key to switch between normal channel group and weather channel group.
● Hold for 1.5 seconds, to select a channel group of USA, International and Canada.
● Push to return to the previous channel before selecting Channel 16 or the Calling channel.

12. LCD display:

13. Microphone.

14. Speaker:

15. Antenna connector.

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● Connect the 50 Ω supplied antenna here.

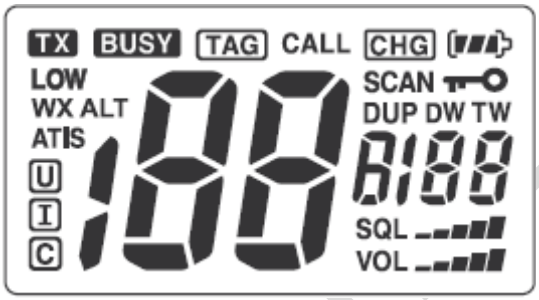
16. Earphone jack [SP MIC]:

● Use for connecting the earphone wire
● Revolve anti-clockwise access flap to open, revolve clockwise to close.

Note:
- Revolve access flap tightly while no earphone wire connected, to avoid water leakage.

8.1.- LCD DISPLAY:

Know the meaning of the icons on LCD screen to ensure well operation.



Icon	Description
TX	● Transmit indicator. Appears while transmitting.
LOW	● “LOW” appears when low power is selected. ● “LOW” blinks when compulsorily switching to low power mode because of high temperature or low voltage.
WX ALT	● “WX” appears when weather channel group selected. ● “WX ALT” appears when weather alarm function activated. ● “WX ALT” blinks when weather alarm tone received.
ATIS	● Appears while working in ATIS channel.
U	● Appears when USA channel group is selected.
I	● Appears when International channel group is selected.
C	● Appears when Canadian channel group is selected.
BUSY	● Appears when channel busy. ● Blinks while monitoring.
TAG	● Appears when a TAG channel is selected.
CALL	● Appears when the call channel is selected.
	● Appears while the lock function is activated.
	● Battery indicator. ● Section rolling display while charging. ● Blinks while full charge.
SCAN	● Blinks while scanning.
DUP	● Appears when a duplex channel is selected.
DUAL	● Appears when dual band watch.
TRI	● Appears when tri-band watch.

	● Indicates the selected operating channel number. ● In set mode indicates the options of setting item.
	● In dual watch/tri-watch, appears CH16 during priority scan. ● Appears volume level while volume setting. ● Appears squelch level while SQL setting. ● Appears corresponding items while mode setting.
	● Show the squelch level. ● "SQL" blinks while setting.
	● Show the volume level. ● Bar indicator rolling show when max volume. ● Blinks when the volume mute is activated. ● "VOL" blinks while setting.

9.- BASIC OPERATION:

9.1.- TURN ON/OFF:

1. Hold [⏻] for 1.5 seconds to turn ON.
2. Hold [⏻] again for 1.5 seconds to turn OFF.

9.2.- ADJUSTING THE VOLUME LEVEL:

The volume level can be adjusted using [VOL] and [▲] / [▼] key.
1. Push [VOL] once to enter the volume adjustment mode. Then press [▲] / [▼] key to adjust the volume level.
● The "VOL" icon stars blinking.
● The transceiver has 31 volume levels and "OF" means off.
● When no key operation is performed for 5 seconds, then transceiver returns to normal operation mode.
2. Push [VOL] key again to exit to normal operation mode.

9.3.- ADJUSTING THE SQUELCH LEVEL:

The squelch level can be adjusted using [SQL] and [▲] or [▼] key. In the order to properly receive signals as well as for effectively scan, the squelch must be adjusted to the proper level.
1. Push [SQL] once to enter the squelch adjustment mode, and then push [▲] or [▼] key to adjust the squelch level.
● The "SQL" icon starts blinking.
● The transceiver has 11 squelch levels: OP is completely open; 10 is tight squelch.
● When no key operation is performed for 5 seconds, the transceiver returns to the normal operation mode.
2. Push [SQL] again to exit to normal operation mode.

9.4.- TRANSMITTING / RECEIVING:

9.4.1.- Transmitting:

1. Push [H/L] key to select output power.
● "LOW" appears when low power is selected.

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● Choose low power for short range communications; choose high power for long distance communications.
● Some channels are for low power communication only.
2. Hold down [PTT] to transmit, and then speak into the microphone.
● “TX” appears.
● Channel 70 cannot be used for transmission.
3. Release [PTT] to receive.

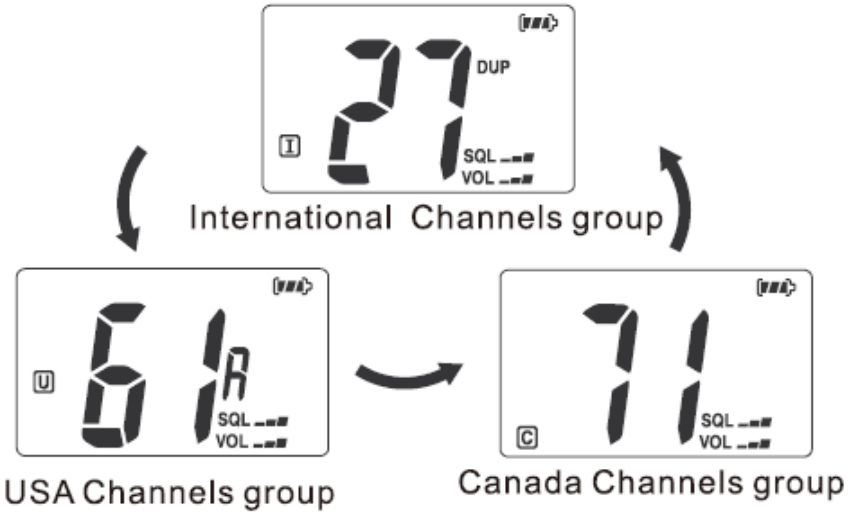
Notes:
- Transmitting without antenna can damage the transceiver.
- Activate TOT function by PC programming software, and then it will limit long time continuous emission.
- 5-10 cm between month and microphone and speak at a normal voice level.

9.4.2.- Receiving:

1. Adjust the volume levels by push [▲] or [▼] key in volume adjusted mode.
2. Set the squelch levels by push [▲] or [▼] key in squelch adjusted mode.
● When receiving a signal, “BUSY” appears and audio is heard from the speaker.
● The transceiver has power save function, automatically activates when no signal is received for 5 seconds.

9.5.- CHANNEL GROUP SELECTION:

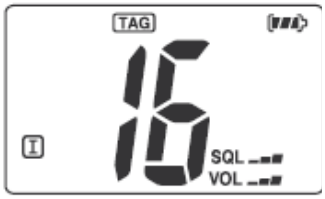
This transceiver is pre-programmed with USA, International, Canadian channels. Choose the appropriate channel groups for your operating area.
1. Push [CH] to select a regular channel.
● If weather channel appears, press [CH] again.
2. Hold down [CH] for 1.5 seconds, to select USA, International, Canadian channel group in sequence.
3. Push [▲] or [▼] key to select a channel.
“DUP” appears when a duplex channel is selected; “A” appears when a simplex channel is selected.



9.6.- CHANNEL SELECTION:

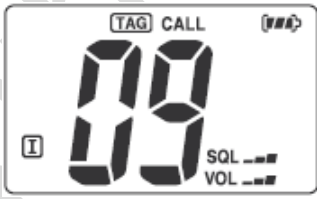
9.6.1.- Channel 16:

Channel 16 is the distress and safety channel, it is used for establishing initial contact with a station and for emergency communications.
Channel 16 is monitored during both dual watch and Tri-watch standby.
1. Push [16/C] momentarily to select channel 16.
2. Push [CH] to return to the channel used before channel 16, push [▲] or [▼] key to select a channel.



9.6.2.- Call channel:

Each regular channel group has separate leisure-use call channels.
The call channel is monitored during Tri-watch. The call channel default as Channel 9 and can be reset.
1. Push and hold [16/C] for 1.5 seconds to select the call channel of the selected channel group. “CALL” and call channel number displayed.
2. Push [CH] key to return to the channel used before call channel, or push [▲] or [▼] key to select other channels.



9.6.3.- Weather channel:

This radio has 10 pre-programmed weather channels. The transceiver can detect a weather alarm tone in selected weather channels in receive and scan mode.
1. Push [CH] to select weather channel and normal channel.
● Appears “WX” when weather channel selected.
● Appears “WX ALT” when turn on weather alert function.
2. Push [▲] or [▼] key to select channel.

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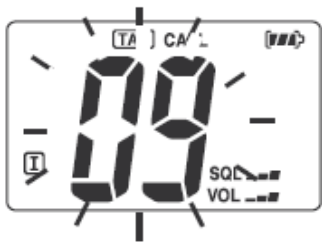
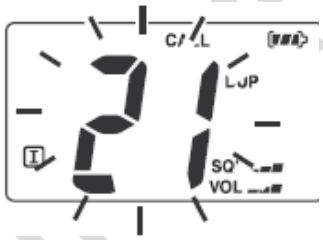
9.6.4.- Call channel programming:

Call channel is default as channel 9, you can program the call channel with you most often-used channel in each channel group for quick recall.
1. Push [CH] to select a desired channel group to be programmed (USA, International, and Canadian).
2. Hold [16/C] key for 1.5 seconds to select a call channel.
"CALL" and call channel number disappeared.
3. Hold [16/C] again for 3 seconds till it sounds "BEEP" tone and "DUDU" tone to enter call channel programming mode.
● Channel number blinks.

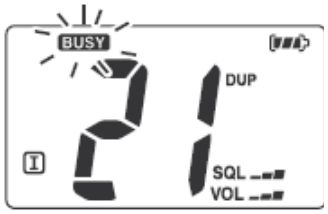


4. Push [▲] or [▼] keys to select desired call channel.
5. Push [16/C] to confirm and save it, push [CH] to cancel and exit.



9.7.- MONITOR FUNCTION:

The monitor function opens the squelch, monitor useful signal. Check details description for monitor key setting below.
● Push [MONI] to activate monitor function.
● "BUSY" will blinks and make a sound while monitor function activated.



9.8.- VOLUME MUTE FUNCTION:

The volume mute function can be activated temporarily, when volume set as OF invalid.
1. Hold [VOL/MUTE] key for 1.5 seconds until hear "Di Di" sound to active volume mute function.

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9.9.- AUTOMATIC BACKLIGHT:

This function is convenient for night time operation. The automatic backlighting can be activated in set mode.
● Push any key except [PTT] to turn the backlight ON.
● The backlighting is automatically turned OFF after 5 seconds of inactivity.

9.10.- LOCK FUNCTION:

This function electronically locks all keys except [PTT] and [▲], [▼], [VOL/MUTE], [H/L/LOCK] to prevent accidental changing of the channel and function access.
● Push and hold [LOCK] key for 1.5 seconds to turn the function ON and OFF.

9.11.- VIBRATION WATER DRAINING FUNCTION:

This transceiver uses a new technology to clear water away from the speaker grill: Vibration. Vibration helps drain water away from the speaker housing (water that might otherwise muffle the sound coming from the speaker).
This transceiver emits a vibrating beep when this function is activated.
● Push and hold [SCAN] and [HI/LO] keys.
● A low beep tone sounds for 9 seconds to drain water, regardless of volume level setting.
● The transceiver does not perform key operations while the vibration function is activated.
The vibration function cannot be activated when an optional speaker-microphone is connected.

9.12.- SCAN MODES:

Scanning is an efficient way to locate signals quickly over a wide frequency range. The transceiver has priority scan and normal scan.
● Weather channels will be scanned also when weather alert function is activated.
● Set TAG channels before scan. Cancel TAG for channels not need to be scanned.

9.12.1.- Normal scan:

It searches through all TAG channels in sequence. However, unlike priority scan, channel 16 is not checked unless channel 16 is set as a TAG channel.

9.12.2.- Priority scan:

A priority scan sequentially searches through all TAG channels while monitoring channel 16. When a signal is detected on channel 16, the scan pauses until the signal disappears. When a signal is detected on a channel other than channel 16, the scan switches to dual-watch, until the signal disappears.

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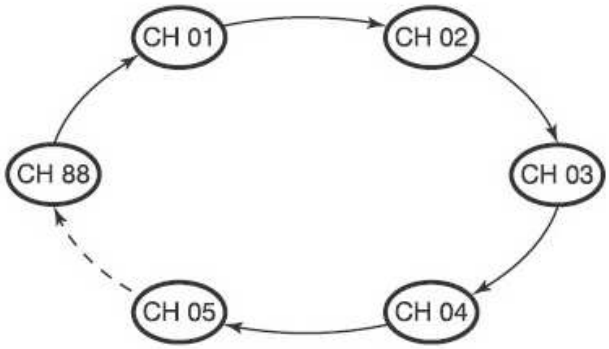
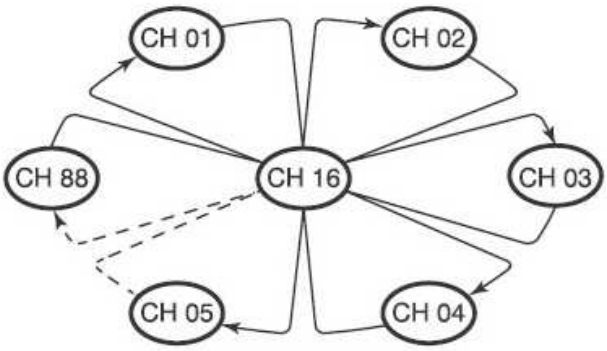


Normal scan



Priority scan

9.13.- SCAN TAG CHANNELS:

For more efficient scanning, set the desired channels as TAG channels or clear the TAG setting from unwanted channels. Channels that are not tagged will be skipped during scanning.

9.13.1.- Set / cancel single TAG channel:

1. Push [CH] to select desired channel group.
2. Push [▲] or [▼] key to select the desired channel to be set as a TAG channel.
3. Push and hold [FAV/TAG] key for 1.5 seconds, to set the displayed channel as a TAG channel.
● "TAG" appears in the function display.
4.- To cancel the TAG channel setting, push and hold [FAV/TAG] for 1.5 seconds.
● "TAG" disappears.

9.13.2.- Set / cancel all TAG channel:

1. While pushing and holding [FAV/TAG] key, press [⏻] to clear all TAG channels in the selected channel group.
2. Repeat above procedure to set all channels as TAG channels.

10.- <u>SCAN OPERATION:</u>

Set scan resume timer in the set mode.
1. Push [SCAN] key to start normal scan or priority scan.
● "SCAN" blinks.
● "16" appears on the sub-channel readout during a priority scan.
● When a signal is received, the scan pauses until the signal disappears, or resumes after pausing 5 seconds, depending on the set mode setting.
● Channel 16 is monitored during priority scan.
● Push [▲] or [▼] key to sequentially select TAG channels, change the scanning direction or manually resume the scan.
2. Push [SCAN] to stop the scan, or push [PTT], [16], [CH] or [FAV] also can stop the scan.

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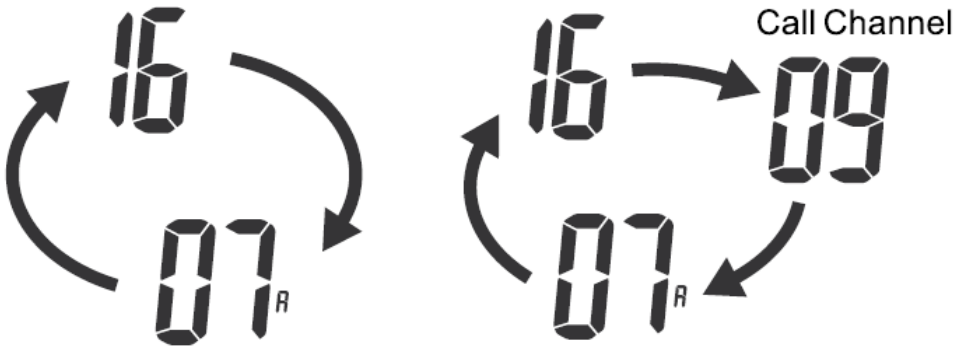
11.- DUAL WATCH / TRI-WATCH:

11.1.- DESCRIPTION:

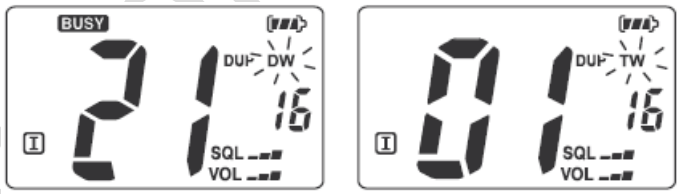
Dual watch/tri-watch of this transceiver can be selected in set mode.
Dual watch: Watch and monitor in turns between current channel and channel 16.
Tri-watch: Watch and monitor in turns among current channel, channel 16 and call channel.



Dual Watch Tri-Watch

11.2.- OPERATION:

1. Push [SCAN/DUAL] for 1.5 seconds to start dual watch or tri-watch.
● "DW" blinks when dual watch; "TW" blinks when tri-watch.
● A beep tone sounds when a signal is received on channel 16.
● Tri-watch switches to dual watch when signal received on call channel.
2. Push [SCAN/DUAL] to cancel dual watch/tri-watch.



Dual Watch Tri- Watch

12.- SET MODE:

12.1.- SET MODE PROGRAMMING:

The set mode is used to change the settings of transceiver´s functions: Beep Tone function, weather alarm, priority scan function, scan resume timer, auto scan function, dual/tri-watch function, monitor key function, automatic backlighting, LCD contrast setting, power save function and squelch sensitivity.

Set mode operation:

1. Turn off the transceiver.
2. While holding down [MONI/SQL] key, turn ON to enter the set mode.
3. Release [MONI/SQL], appears "bP".
4. Push [VOL/SQL] key to select a desired setting item.

5. Push [▲] or [▼] key to select a desired setting parameter.
6. To exit the set mode, push [16/C] key.

No.	Display	Function	Set parameter options	The default value
1	bP	“Beep” tone	of / on	on
2	AL	Weather alert	of / on	of
3	Pr	Priority scan	of / on	of
4	St	Scan resume timer	of / on	of
5	AS	Automatic scanning	of / on	of
6	dt	Dual watch/Tri-watch	d- / t-	d-
7	Sq	Monitor key functions	Pu / Ho	Pu
8	bL	Automatic backlight	of / on	On
9	LC	LCD contrast	Hi / Lo	Hi
10	PS	Automatic power save	of / on	on
11	SS	Squelch sensitivity	of / on	of

12.2.- SET MODE ITEMS:

12.2.1.- Beep tone function:

Turn the key touch beep sound ON or OFF.

12.2.2.- Weather alert:

When there is significant weather information, the U.S.NOAA broadcast stations will transmit the weather alarm. When the weather alert function is turned on, the transceivers will sound the alarm at the same time the “WX ALT” icon flashes. During the scan, the current weather channel in use will be scanned.
● With this function enabled, when weather channel is selected, the “WX ALT” icon displayed in the screen.

12.2.3.- Scan mode:

The transceiver has two scan types: Normal scan and priority scan.
● In normal scan searches all TAG channels in the selected channel group.
● In priority scan, sequentially searches all TAG channels also channel 16.

12.2.4.- Scan resume timer:

The scan resume timer can be set as a pause (OFF) or timer scan (ON).
● OFF: When a signal is detected, the scan pauses on the channel until the signal disappears, and then resumes.
● ON: When a signal is detected, the scan pauses on the channel for 5 seconds, and then resumes.

12.2.5.- Auto scan function:

The auto scan function automatically starts a normal or priority scan when no signal is received and no operation is performed for 30 seconds.

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12.2.6.- Dual watch / tri-watch function:

Set the watch type to dual-watch or tri-watch.

12.2.7.- Monitor key function:

The monitor key temporarily opens the squelch. This item sets the key operation.
● Pu (Push): The monitor function is activated by holding down [MONI] key. The squelch remains open while holding down the key.
● Ho (Hold): The monitor function is activated by holding down the [MONI] key for 1.5 seconds; the squelch will remain open until this key is pressed again.

12.2.8.- Automatic backlighting:

This function is convenient for night-time operation. The backlight can be selected from ON and OFF. When you select ON, press any key except the [PTT] to turn on backlighting.
● The backlighting is automatically switches OFF after 5 seconds of inactivity.

12.2.9.- LCD contrast setting:

Select the LCD contrast level to high or low contrast.
● The LCD contrast level has little effect during indoor use.

12.2.10.- Power save function:

The power save function reduces current drain by turning OFF the receiver circuit for pre-set intervals.
● OFF: Function is turned OFF.
● ON: Function is turned ON and will be activated when no signal is received, and no operation is performed for 5 seconds.

12.2.11.- Squelch sensitivity:

Squelch sensitivity function is activated to enhance noise reduction, avoid noise from affecting the squelch.

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13.- VHF MARINE CHANNEL LIST:

Channel number			Frequency (MHz)		Channel number			Frequency (MHz)	
EEUU	INT	CAN	Tx	Rx	EEUU	INT	CAN	Tx	Rx
	01	01	156.050	160.650		21	21	157.050	161.650
01A			156.050	156.050	21A		21A	157.050	157.050
	02	02	156.100	160.700			21b	RX only	161.650
	03	03	156.150	160.750		22		157.100	161.700
03A			156.150	156.150	22A		22A	157.100	157.100
	04		156.200	160.800		23	23	157.150	161.750
		04A	156.200	156.200	23A			157.150	157.150
	05		156.250	160.850	24	24	24	157.200	161.800
05A		05A	156.250	156.250	25	25	25	157.250	161.850
06	06	06	156.300	156.300			25b	RX only	161.850
	07		156.350	160.950	26	26	26	157.300	161.900
07A		07A	156.350	156.350	27	27	27	157.350	161.950
08	08	08	156.400	156.400	28	28	28	157.400	162.000
09	09	09	156.450	156.450			28b	RX only	162.000
10	10	10	156.500	156.500		60	60	156.025	160.625
11	11	11	156.550	156.550		61		156.075	160.675
12	12	12	156.600	156.600	61A		61A	156.075	156.075
13*	13	13*	156.650	156.650		62		156.125	160.725
14	14	14	156.700	156.700			62A	156.125	156.125
15*	15*	15*	156.750	156.750		63		156.175	160.775
16	16	16	156.800	156.800	63A			156.175	156.175
17*	17	17*	156.850	156.850		64	64	156.225	160.825
	18		156.900	161.500	64A		64A	156.225	156.225
18A		18A	156.900	156.900		65		156.275	160.875
	19		156.950	161.550	65A	65A	65A	156.275	156.275
19A		19A	156.950	156.950		66		156.325	160.925
20	20	20*	157.000	161.600	66A	66A	66A*	156.325	156.325
20A			157.000	157.000	67*	67	67	156.375	156.375

* Low power only.

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Channel number			Frequency (MHz)	
EEUU	INT	CAN	Tx	Rx
68	68	68	156.425	156.425
69	69	69	156.475	156.475
70	70	70	RX only	156.525
71	71	71	156.575	156.575
72	72	72	156.625	156.625
73	73	73	156.675	156.675
74	74	74	156.725	156.725
75*	75*	75*	156.775	156.775
76*	76*	76*	156.825	156.825
77*	77	77*	156.875	156.875
	78		156.925	161.525
78A		78A	156.925	156.925
	79		156.975	161.575
79A		79A	156.975	156.975
	80		157.025	161.625
80A		80A	157.025	157.025
	81		157.075	161.675
81A		81A	157.075	157.075
	82		157.125	161.725
82A		82A	157.125	157.125
	83	83	157.175	161.775
83A		83A	157.175	157.175
		83b	RX only	161.775
84	84	84	157.225	161.825
84A			157.225	157.225
85	85	85	157.275	161.875
85A			157.275	157.275
86	86	86	157.325	161.925

Channel number			Frequency (MHz)	
EEUU	INT	CAN	Tx	Rx
86A			157.325	157.325
87	87	87	157.375	161.975
87A	87A	87A	157.375	157.375
88	88	88	157.425	162.025
88A	88A	88A	157.425	157.425

Weather channels	Frequency (MHz)	
	TX	RX
1	RX only	162.550
2	RX only	162.400
3	RX only	162.475
4	RX only	162.425
5	RX only	162.450
6	RX only	162.500
7	RX only	162.525
8	RX only	161.650
9	RX only	161.775
10	RX only	163.275

* Low power only.

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14.- TECHNICAL SPECIFICATIONS:

General	
Frequency range	TX: 156.000 – 161.450 MHz
	RX: 156.050 – 163.425 MHz
Type of emission	FM (16K0G3E)
Frequency stability	±10 ppm
Battery pack	Li-ion 7.4 V / 1200 mAh
Operating temperature range	-20 ºC ~ +55 ºC
Antenna impedance	50 Ω
Dimensions (H x W x D)	140 x 65 x 41 mm
Weight	288 g. (With battery, antenna and belt clip)

Transmitter	
Output power	5 W / 1 W
Maximum frequency deviation	±5 kHz
Spurious emissions	≤ 0.25 µW
Adjacent channel power	≥70 dB
Distortion	≤10 %
Current drain	≤1.5 A (high power) ≤0.9 A (low power)

Receiver	
Sensitivity	≤0.22 µV
Squelch sensitivity	≤0.22 µV
Hum and noise	≥40 dB
Adjacent channel selectivity	≥70 dB
Spurious response	≥70 dB
Intermodulation rejection	≥68 dB
Audio output power	≥0.5 W (10 %)
Current drain	≤0.35 A (Maximum audio output)

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15.- TROUBLESHOOTING:

The problems described in the following table are some common operational failures. These types of errors are generally due to improperly connection, the operation caused by incorrect setting, or operator error caused due to incomplete programming. These problems are usually not caused by a transceiver failure. Before suspect that the transceiver is damage, refer to the relevant section of this manual.

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
The transceiver cannot be turned on.	● The battery is exhausted. ● The battery pack is not correctly inserted.	● Recharge the battery pack. ● Correctly insert the battery pack.
The transceiver does not transmit, or does not transmit with high power.	● Some channels are limited to low power transmitting. ● The battery is exhausted. ● The output power is set to low. ● Working in weather channel or CH 70.	● Switch to channels without output power limited. ● Recharge the battery pack. ● Push [H/L] key to select high output power. ● Quit weather channel or CH 70.
The channel cannot be changed.	● The keypad lock function is enabled.	● Hold [LOCK] ley for 1.5 seconds to turn off the function.
Scan does not start.	● No TAG channels are set.	● Set desired channels as TAG channels.
Cannot communicate in same channel.	● It is duplex channel. ● Work in self-set channel group.	● Choose channel. ● Set channel frequency as same.
No beep tone.	● Beep function is turned off.	● Turn on the beep function in set mode.
No sound from loudspeaker.	● The squelch level is too high. ● The volume level is too low. ● Speaker has been exposed to water.	● Set suitable squelch level. ● Push [VOL] key, then [▲] / [▼] key to adjust volume. ● Discharge water from speaker grill.
If you continue to have problems with the transceiver, consult the Technical Service or salesperson.		

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16.- DECLARATION OF CONFORMITY:

PIHERNZ

EU DECLARATION OF CONFORMITY

We: PIHERNZ COMUNICACIONES, S.A.
I.D. number: A-08671638.
C/ Comercio, 2-22. Nave 12. Polígono Industrial El Plá.
08980 Sant Feliu de Llobregat–Barcelona (SPAIN).
Phone no.: (+34) 933 348 800 • Mobile phone no.: (+34) 675 722 853
Fax: (+34) 933 340 409 • e-mail: administracion@pihernz.es

Product description:

Equipment	:	VHF/FM HANDHELD MARINE TRANSCEIVER
Brand	:	JOPIX MARINE
Model	:	515P
Manufacturer	:	PIHERNZ COMUNICACIONES, S.A.
Made in	:	P.R.C.

Declare under our sole responsibility that the named equipment it´s conforms to the provisions of the Directive 2014/53/UE of the European Parliament and of the council of 16 April 2014 on the harmonization of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC.

The product conformity is especially evidenced by full compliance with the following standards:

- ETSI EN 301 178 V2.2.2 (2017-04).
- ETSI EN 301 843-1 V2.1.1 (2016-03); ETSI EN 301 843-2 V2.1.1 (2016-03).
- EN 60950-1 (2006) + A11 (2009) + A1 (2010) + A12 (2011) + A2 (2013).
- EN 62311 (2008).

The notified body 1313 *"Bay Area Compliance Laboratories Corp."* has issued the EU-Type Examination (Module B) Certificate number: B1711141.

CE

Sant Feliu de Llobregat-Barcelona (Spain), 2018-02-19

PIHERNZ

Jordi Pi Anton, Manager.
PIHERNZ COMUNICACIONES, S.A.

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