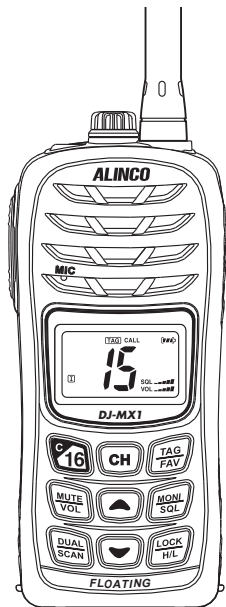


ALINCO



VHF MARINE Transceiver

DJ-MX1

Instruction Manual

Thank you for purchasing your new Alinco transceiver. Please read this manual carefully before using the product to ensure full performance, and keep this manual for future reference as it contains information on after-sales service. In case addendum or errata sheets are included with this product, please read those materials and keep them together with this instruction manual for future reference.

Introduction

■ About VHF Marine channels

This transceiver can operate on all international, USA and Canadian VHF marine channels. Be mindful to operating channels according to the location of your vessel. Use of incorrect channels, useless transmissions and harmful interferences on marine channels may be subject to penalty and/or fine by local authority. Weather channels and alert functions are usable where N.O.A.A. weather radio signals are receivable.

Please read this manual completely from the first page to the last, to learn all the functions the product offers. It is important to note that some of the operations may be explained in relation to information in other chapters. By reading just one part of the manual, you may risk not understanding the complete explanation of the function.

■ Lightning

Any person is not safe outdoor during thunderstorm and lightning. This condition is getting worse if somebody keeps a handheld radio, chances of being hit by lightning are doubled since lightning may hit a radio antenna as well. At this time, there is no handheld radio having any kind of protection against lightning current (which is higher than 10 kA). Therefore, Alinco will not take responsibility for any danger associated with using its handheld radios during lightning.

■ Emergency Calling Procedure

If your vessel requires assistance, contact other vessels and the appropriate Coast Guard by sending a distress call on Channel 16. Set the 16CH and:

1. Call "MAYDAY" 3 times.
2. "THIS IS (name of your vessel)"
3. Your call sign or other identification of the vessel if any.
4. "LOCATED AT (your position)"
5. The nature of the distress and assistance required.
6. Any other information which might facilitate the rescue.

■ RADIO OPERATOR WARNING

This radio generates RF electromagnetic energy while transmitting.

- DO NOT operate the radio without a proper antenna attached, as this may damage the radio and may also cause you to exceed RF exposure limits. A proper antenna is the antenna supplied with this radio by the manufacturer.
- DO NOT transmit for more than 50% of total radio use time ("50% duty cycle"). Transmitting more than 50% of the time can cause RF exposure compliance requirements to be exceeded. The radio is transmitting when the "TX" appears on the LCD. You can cause the radio to transmit by pressing the "PTT" key on the upper left side.
- ALWAYS keep the antenna at least 2.5 cm (1 inch) away from the body when transmitting to ensure RF exposure compliance requirements are not exceeded. To provide the recipients of your transmission the best sound quality, hold the antenna at least 5 cm (2 inches) from your mouth, and slightly off to one side.

■ Electromagnetic Interference/Compatibility

During transmissions, this radio generates RF energy that can possibly cause interference with other radio/electronics/electric devices or systems. TURN OFF and NEVER operate the radio in areas where signs are posted to do so, such as hospitals, aboard aircraft, and blasting sites.

■ Covering ranges

You may expect a range of approx 3km (2 miles) or more at high-power when located on a noise-free place. However, it may vary drastically depending on how to wear and carry the radios, surrounding locations/conditions and static noise levels.

■ IMPORTANT NOTICE

Important rules

- Safety and distress calls take priority over all others.
- You must monitor Channel 16 when you are not operating on another channel.
- False or fraudulent distress calls are prohibited under law.
- Information overheard, but not intended for you, can't lawfully be used in any way.
- Indecent or profane language is prohibited.

Licenses

SHIP STATION and/or Operator's license may be required. You may require a current radio license before using this transceiver. Illegal operations may risk penalty and/or fine.

Consult your dealer about licensing rules in your country.

Features

- Output power selectable 5W/1W
- Li-ion battery pack and stand-charger as standard accessories
- Selectable Battery-save parameters
- Waterproof IPX7
- Dual-watch/Tri-watch Function
- Various Scan Mode
- Weather Alert Function
- Auto backlight
- Floating on water^(*1)
- Floats and Flashes^(*2)

(*1): Floating on water

The transceiver floats on fresh or salt water even when the supplied accessories are attached.







When a third-party battery pack, strap, antenna, etc. is used, it may sink.

The battery contacts may be prone to rust if the transceiver is kept floating in fresh or salt water.

(*2): See more details at page 26.

WARNING










To prevent any hazard during operation of Alinco's radio product, in this manual and on the product you may find symbols shown below. Please read and understand the meanings of these symbols before starting to use the product.



 Danger	This symbol is intended to alert the user to an immediate danger that may cause loss of life and property if the user disregards the warning.
 Alert	This symbol is intended to alert the user to a possible hazard that may cause loss of life and property if the user disregards the warning.
 Caution	This symbol is intended to alert the user a possible hazard that may cause loss of property or injure the user if the warning is disregarded.
	Alert symbol. An explanation is given.
	Warning symbol. An explanation is given.
	Instruction symbol. An explanation is given.







Alert

■ Environment and condition of use



-  Use of improper channel group may be illegal and intentional violations may be subject to fine and penalty.
-  Never operate this product in close proximity to inflammable liquids/gas. This product is not anti-explosion.
-  Do not use this product in close proximity to other electronic devices, especially medical ones. It may cause interference to those devices.
-  Keep the radio out of the reach of children.
-  In case a liquid leaks from the product, do not touch it. It may damage your skin. Rinse with plenty of cold water if the liquid contacted your skin.
-  Never operate this product in facilities where radio products are prohibited for use such as aboard aircraft, in airports, within or near the operating area of business wireless stations or their relay stations.
-  The manufacturer declines any responsibilities against loss of life and/or a property due to a failure of this product when used to perform important tasks like life-guarding, surveillance, and rescue.
-  Do not use multiple radios in very close proximity. It may cause interference and/or damage to the product(s).
-  Risk of explosion if battery is replaced with an incorrect type. Dispose of, or recycle used batteries according to your local regulations.




-  The manufacturer declines any responsibilities against loss of life and property due to a failure of this product when used with or as a part of a device made by third parties.
-  Use of third party accessory may result in damage to this product. It will void our warranty for repair.

■ Handling this product

-  Be sure to reduce the audio output level to minimum before using an earphone or a headset. Excessive audio may damage hearing.
-  Do not open the unit without permission or instruction from the manufacturer. Unauthorized modification or repair may result in electric shock, fire and/or malfunction and voids warranty.
-  DO NOT use or place the radio in direct sunlight or in areas with temperatures range of below -20°C or above $+55^{\circ}\text{C}$. Be mindful to keep the radio warm in extremely cold place as low temperature may temporary cause the drop of voltage to batteries.
-  Do not place the product in a container carrying conductive materials, such as metal in close proximity. A short-circuit to the product may result in electric shock, fire and/or malfunction.

■ About chargers

-  Do not use adapters other than having the specified voltage. It may result in electric shock, fire and/or malfunction, Never turn on the radio while charging.
-  Do not plug multiple devices using an adapter into a single wall outlet. It may result in overheating and/or fire.




-  Do not handle adapter with a wet hand. It may result in electric shock.
-  Securely plug the adapter into the wall outlet. Insecure installation may result in short-circuit, electronic shock-and/or fire.
-  Do not use the adapter if the plug or socket contacts are dirty. Overheating and/or short-circuiting may result in fire, electric shock and/or damage to the product.

■ In case of emergency

In case of the following situation(s), please turn off the product, switch off the source of power. Please contact your local dealer of this product for service and assistance. Do not use the product until the trouble is resolved. Do not try to troubleshoot the problem by yourself.

- **When a strange sound, smoke and/or strange odor comes out of the product.**
- **When the product is dropped or the case is broken or cracked.**
- **When a liquid penetrated inside.**







■ Maintenance

-  Do not open the unit and its accessories. Please consult with your local dealer of this product for service and assistance.
-  Use slightly wet clean cloth to wipe off dirt and salt condensation from the surface after every use.
-  Never use high-pressure running water, thinner or benzene for cleaning. Those substances may cause damages to product.






Caution


■ Environment and condition of use

-  Do not use in close proximity to audio-video products such as a TV. It may cause or receive interference.
-  DO NOT submerge the radio when dropped to hard floor. It may risk possible damage to the case and water-protection shields to cause leak inside. The components inside of radio are NOT water-proof.
-  Do not install in an unstable or vibrating position. It may result in electric shock, fire and/or malfunction when/if the product falls to the ground.
-  Do not install the product in proximity to a source of heat and humidity such as a heater or a stove. Avoid placing the unit in direct sunlight.
-  Be cautious of a dew formation. Please completely dry the product before use when it happens.
-  Electronics devices such as solar panels and LED light bulbs may generate high levels of RF noise that may cause an interference. This is not a defect of receiver circuits of our product.

■ About transceiver

-  Be cautious of the whip antenna when carried. It may make contact with your eye and cause injury.
-  Do not connect devices other than specified ones to the jacks and ports on the product. It may result in damage to the devices.

 Turn off and remove the power source (charger adapter etc.) from the product when the product is not in use for extended period of time or in case of maintenance.

 Never pull the cord alone when you unplug AC cable from the wall outlet.



Check with your local waste officials for details on recycling or proper disposal of the electronics product, battery-packs and accessories in your area.

RoHS

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◦ STANDARD ACCESSORIES

Standard Accessories

- EA-257 Whip antenna
- EBP-104 Li-ion battery pack (7.4V,1200mAh)
- EDC-294 Rapid charger
- EDC-298 AC Adapter
- EBC-54 Belt Clip
- Belt Clip Fixing Screws
- Charger Desktop Tapping Screws


NOTE: Accessories may differ depending on the version you have purchased. Please contact your local dealer for details of standard accessories and the warranty-policy before purchase. Make sure accessories are completely dry before attachment.

○ BATTERY INFORMATION

(((Charging Operation

The battery is not charged at the factory, please charge it before use. Charge the battery for the first time after purchase or extended storage (more than 2 months) may not bring the battery to its normal operating capacity. After repeating fully charge/discharge cycle for two or three times, the operating capacity will reach the best performance. The battery life is over when its operating time decreases even though it is fully and correctly charged and it must be replaced to a new one.

(((Battery Charger Type

Please use ALINCO's designated charger, other models may cause explosion. After installing the battery, when the radio displays  low battery, please charge the battery.

(((Notice for Charging Battery

- ▲ Do not short circuit the charger. Never attempt to remove the casing from the battery, otherwise the warranty is void and you risk serious damage to yourself and properties.
- ▲ The ambient temperature should be between 5°C and 40°C while charging. The battery won't be charged out of this temperature range.
- ▲ To avoid interfering the charging procedure, please do not cut off the power or take out the battery during charging.
- ▲ Do not recharge the battery if it is already fully charged. This may shorten the life of the battery or damage the battery.
- ▲ Do not charge the battery or radio if it is damp. Dry it before charging to avoid danger.

○ BATTERY INFORMATION

Caution

- Risk of explosion, generation of heat or leak of chemicals inside if the battery is replaced by an incorrect type or reverse polarity. Use always the recommended types of batteries in this manual only.
- The battery pack isn't fully charged when shipped. It must be charged before use.
- Charging should be conducted in a temperature range of +5°C to +40°C (+41°F to +104°F).
- Don't modify, dismantle, incinerate or immerse the battery pack in the water as this can be dangerous.
- Never short circuit the battery pack terminals, as this can cause damage to the equipment or lead to heating of the battery which may cause burns.
- Unnecessary prolonged charging (overcharging) can deteriorate battery performance.
- The battery pack should be stored in a dry place where temperature is in -10°C to +45°C (-14°F to +113°F) range. Temperatures outside this range can cause the battery liquid to leak. Exposure to prolonged high humidity can cause corrosion of metal components.
- Battery-packs are a consuming part. When its operating time becomes considerably short after a normal charge, please consider that the pack is exhausted and replace it with a new one.
- The battery pack is recyclable. Check with your local waste officials for details on recycling options or proper disposal in your area.
- Use specified genuine chargers only to charge battery packs. Use of other chargers may cause damage to products, you and your property.
- Never carry battery packs together with conductive articles such as metals in a same bag to prevent from short-circuiting. Put the packs only in nylon bags to carry them safely.
- Even if you do not use the battery pack for a long time, charge it at least once every three months to prevent deterioration.

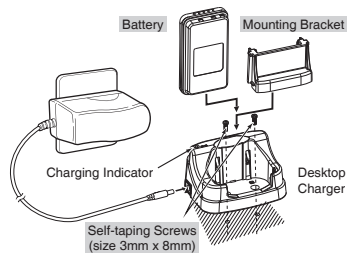
○ BATTERY INFORMATION

How to Charge

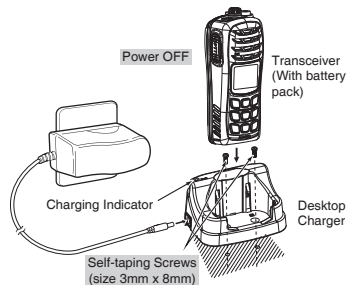
1. Plug the AC adaptor into the wall-outlet. Connect the DC plug into the DC jack on the charger.
2. Insert the battery alone or with radio into the charger. and make sure the battery terminals are in contact with the charging terminals. LED turns to RED (charging).
3. It takes about 4.5 hours to fully charge the battery, and LED lights GREEN when the charge is complete.

Warning: Never charge

- While the radio is turned on. When turned on, the charger and LED indication may fail to operate.
- When the radio and/or the battery are wet. It may cause short-circuit and water-damage to the charger.



Charge the separate battery



Charge radio with battery attached

○ BATTERY INFORMATION

NOTE:

- ▲ Trouble means battery heating, short circuit or charger malfunction. Remove the battery pack from the charger immediately and contact to your local dealer for services.
- ▲ The max trickle pre-charging time is 30 minutes. In case the red indicator continues to blink longer, please stop charging and consult with your local dealer for services.
- ▲ It is known that Li-Ion battery packs heat up over 400°C by itself when kept in a temperature of over 80°C for extended period of time. Although the packs are protected against overheating with a protective circuit, never leave the battery packs in a car or similar locations in hot seasons.
- ▲ Li-ion packs may deteriorate by over 30% regardless of conditions after 3 years. This is a nature of Li-ion pack and not a defect of the product.
- ▲ The charger is to charge the battery pack only. It is not an AC adapter to operate the radio. Never attempt to transmit the radio with using the charger as it will cause the damage to the charger and a repair/replace may become necessary.
- ▲ The charge should be conducted in an ambient temperature with a proper air-conditioning in an extremely hot or cold seasons.
- ▲ Try charging the battery pack only when having trouble charging with the radio. In case the radio may have troubles, the charge can't be conducted properly. If the battery pack can be charged alone, please take the radio to your local dealer for services.

○ BATTERY INFORMATION

How to Store the Battery

1. The battery should be kept in the status of 50%-100% charged when storing.
2. It should be kept in cool, dry environment and remove it from the radio.
3. Keep away from source of heat and direct sunlight.

WARNING

- ▲ Do not short circuit battery terminals.
- ▲ Never attempt to remove the casing from the battery pack.
- ▲ Never assemble the battery hazardous in explosive atmosphere as, spark may cause explosion.
- ▲ Do not put the battery in hot environment or throw it into fire, it may also cause explosion.

Note : Battery pack discharges faster when it is attached to the radio. Please always remove it from the radio when not in use.

○ PREPARATION

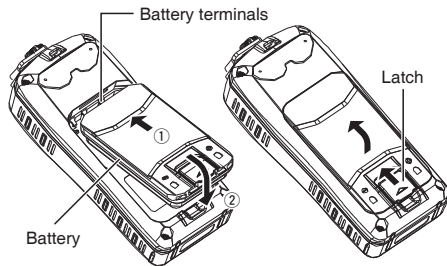
📶 Installing / Removing the Battery

■ Installing the Battery:

Align the catches on the unit with the grooves on the battery pack, slide the pack forward as ①, then close the latch until it clicks as ②. This radio is watertight when battery pack is tightly assembled to the body.

■ Removing the Battery Pack:

Press the latch in the direction of the arrow, and pull out the battery pack.



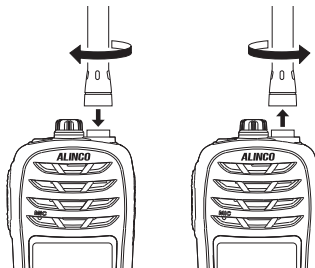
📶 Installing / Removing the Antenna

■ Installing the Antenna:

Screw the antenna into the connector on the top of the radio by holding the antenna at its base and turning it clockwise until secure.

■ Removing the Antenna:

Turn the antenna anticlockwise to disconnect the antenna.



NOTE: Do not use third-party antenna as it may radiate more RF that exceeds SAR limit guidances.

○ PREPARATION

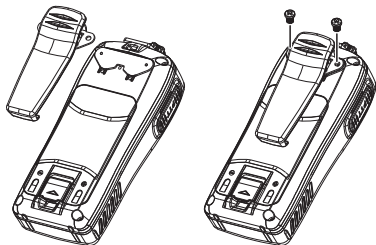
(((Installing / Removing the Belt Clip

■ **Installing the Belt Clip:**

Place the belt clip to the grooves on the back of the radio, and then fix it by provided screws. (screws size 3mm x 4mm).

■ **Removing the Belt Clip:**

When removing, loose the two screws on the belt clip and remove the belt clip. Never use screws of incorrect size.



(((Installing Optional Microphones

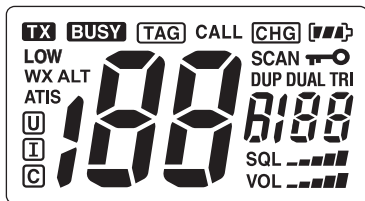
Unveil the MIC-SP jack cover and then insert the Microphone plug into MIC-SP jack.

NOTE:

1. To keep the radio water resistant, the accessory port must be closed properly with the original supplied cover.
2. Use genuine, specified Alinco microphone accessories for water-tight operations. The earphone microphone unit is not waterproof and components such as PTT key / microphone gain switch etc may risk water damage.

◦ GETTING ACQUAINTED




📶 LCD Display






Icon	Description
TX	• Transmit Indicator, appears while transmitting
LOW	<ul style="list-style-type: none"> • "LOW" appears when low power is selected • "LOW" blinks when compulsorily switching to low power mode because of high temperature or low voltage

Icon	Description
WX ALT	<ul style="list-style-type: none"> • "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	<ul style="list-style-type: none"> • Appears when channel is receiving a signal or when the squelch opens. • Blinks while monitoring
TAG	• Appears when a TAG channel is selected

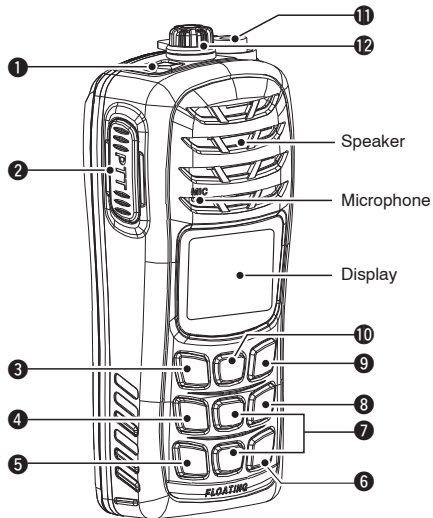
o GETTING ACQUAINTED

Icon	Description
CALL	<ul style="list-style-type: none"> • Appears when the call channel is selected
	<ul style="list-style-type: none"> • Appears while the keypad lock function is activated
	<ul style="list-style-type: none"> • Battery Indicator • Section rolling display while charging • Blinks while full charge
SCAN	<ul style="list-style-type: none"> • Blinks while scanning
DUP	<ul style="list-style-type: none"> • Appears when a duplex channel is selected.
DUAL	<ul style="list-style-type: none"> • Appears when dual band watch
TRI	<ul style="list-style-type: none"> • Appears when tri-band watch
	<ul style="list-style-type: none"> • Indicates the selected operating channel number • Indicates available options in Set mode

Icon	Description
	<ul style="list-style-type: none"> • 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
SQL 	<ul style="list-style-type: none"> • Show the squelch level • SQL blinks while setting.
VOL 	<ul style="list-style-type: none"> • Show the volume level • Blinks when the volume mute is activated • VOL blinks while setting

◦ GETTING ACQUAINTED

Appearance



① Power Key [⏻]

② [PTT] Key

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

NOTE: Please do not close the microphone hole with a label, finger etc. It may reduce clarity of your voice.

③ CH 16/Call CH [16]/[C]

- Press to select channel 16.
- Hold for 1.5 seconds to select the call channel.
- When the call channel is selected, hold for 3 seconds to enter the call channel programming mode.
- While in the set mode, press to return to the normal operation mode.

o GETTING ACQUAINTED

4 Volume Key [VOL]/[MUTE]

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

5 Scan/Watch Key [SCAN]/[DUAL]

- Press to start or stop scan mode (including normal and priority scan).
- Hold for 1.5 seconds to enter the Dual/Tri-watch mode.
- Press to exit the watch mode

6 High/low Power/Lock Key [H/L]/[Lock]

- Press to select the high or low output power.
- Hold for 1.5 seconds to turn the Lock function ON or OFF.

7 Up/Down Key [▲]/[▼]

- Press to select an operation channel in normal mode.
- While in the Set mode, press to select parameters.
- Press to change scanning direction during channel scan.

8 Squelch/Monitor Key [SQL]/[MONI]

- Press this key, then press [▲]/[▼] key to adjust squelch level.
- Hold for 1.5 seconds to open squelch temporary (MONITOR), release to exit.
- While hold this key, press [⏻] key to turn ON and enter the set mode.

9 Favorite/Tag Channel Key [FAV]/[TAG]

- Hold this key, then press [▲]/[▼] key to sequentially select the favorite/tag 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

◦ GETTING ACQUAINTED

channel group.

⑩ Channel Group Key [CH]

- 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. U, I and C icons will appear on LCD accordingly.
- Press to return to the previous channel before selecting Channel 16 or the Calling channel.

⑪ Antenna Connector

Connect the 50Ω supplied antenna.

⑫ Earphone Jack [SP MIC]

Use for connecting to our ALINCO's earphone or speaker microphone option accessories.

Revolve anti-clockwise access flap to open, revolve clockwise to close.

NOTE: Be sure to close the jack cover and tightly screw it when accessories are not in use. Loose screw may cause penetration of water and damages to the product.

o BASIC OPERATIONS

(((Turn the Radio ON & OFF

Hold down power button for over 1.5 seconds to power on/off transceiver.

IMPORTANT: KEEP the radio at least 0.9 meter (3.0 feet) away from your vessel's magnetic navigation compass.



(((Adjusting Volume

Press [VOL] key, "VOL" indicator starts blinking, then press [▲]/[▼] key to adjust volume level.

- There are 31 volume levels and OFF (mute).
- When no key is pressed for 5 seconds the radio returns to normal condition.
- Press [VOL] key again to return and exit.

NEVER USE EARPHONE while adjusting audio level. The max audio output is loud enough to hurt your eardrums.

You may feel a static shock when wearing an earphone in a dry atmosphere but it's not a defect of product but a cause of nature. It is the same shock you feel typically when opening a door of a car in certain conditions.

(((Adjusting the Squelch Level

Press [SQL] key, "SQL" indicator starts blinking, then press [▲]/[▼] key to adjust volume level.

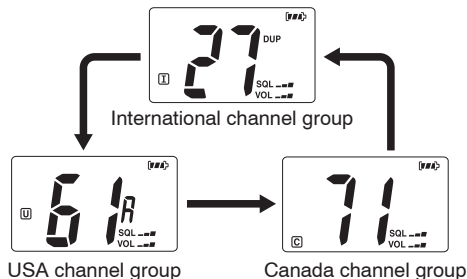
- There are 11 squelch levels: OP is completely open; 10 is tight squelch.
- When no key is pressed for 5 seconds the radio returns to normal condition.
- Press [SQL] key again to return and exit.

○ BASIC OPERATIONS

📶 Channel Group Selection

This radio is pre-programmed with USA, International, Canadian group channels. To choose the appropriate channel groups for your operating area.

1. Press **[CH]** key to select a regular channel.
 - If weather channel appears, press **[CH]** key again.
2. Hold down **[CH]** for 1.5 seconds, to select USA, International, Canadian channel group in sequence.
3. Press **[▲]/[▼]** key to select a channel.
 - “DUP” icon appears when a duplex channel is selected, “A” icon appears when a simplex channel is selected.



📶 Channel Selection

■ Channel 16

Channel 16 is the distress and safety channel. It is also used for establishing initial contact with a station and for emergency communications. Channel 16 is monitored during both Dualwatch and Tri-watch. While in standby, you must monitor Channel 16. per international rules.

- Press **[16/C]** key to select Channel 16.
- Press **[CH]** key to return to the channel used before Channel 16.

o BASIC OPERATIONS

■ 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.

- Press and hold **[16/C]** key for 1.5 seconds to select the call channel of the selected channel group. “CALL” and call channel number displayed.
- Press **[CH]** to return to the channel used before call channel.



■ Call Channel Programming

The default setting CALL channel is 9, and it can be edited to your most frequently-used channel in each channel group.

1. Press **[CH]** key to select a desired channel group to be programmed. (USA, International, Canadian).
2. Hold **[16/C]** key for 1.5 seconds to select a call channel.
 - “CALL” and call channel number appear.
3. Hold **[16/C]** again for 3 seconds; a continuous beep sounds while holding the key, then short beep sounds twice and the channel number starts to blink.
4. Press **[▲]/[▼]** key to select desired call channel.
5. Press **[16/C]** key to confirm and save then press **[CH]** key to cancel and exit.



o BASIC OPERATIONS

■ Weather Channels

This radio has 10 pre-programmed weather channels. The equipment can detect a weather alarm tone in selected weather channels in receive and scan mode.

- Press **[CH]** key to select weather channel and normal channel.
Appears “WX” when weather channel selected.
Appears “WX ALT” when turn on weather alert function.
- Press **[▲]/[▼]** key to select channel.



(((Receiving

Press **[▲]/[▼]** key to select the desired RX channel. When receiving a signal, in LCD “BUSY” icon appears and audio is heard from the speaker.

(((Transmitting

Use **[MONI]** key and monitor the channel you are going to transmit and make sure the channel is clear.

Press the **[PTT]** key “TX” icon appears while transmitting. Speak into the unit at normal voice from the distance of about 5cm.

Release the **[PTT]** key to receive.

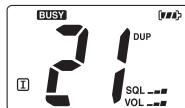
NOTE: Talking too loud or undertone may result poor audio at receiving side.

o BASIC OPERATIONS

(((MONI Key Function

The monitor key is used to temporary open the squelch to monitor weaker signals.

Press and hold **[MONI]** key for a second until squelch opens. “BUSY” icon is displayed. Release **[MONI]** key to exit. The key operation “Push” and “Hold” are selectable in Setup mode explained in P.23.



(((Volume Mute Function


This function is to mute the audio output temporarily. Hold **[VOL/MUTE]** key for 1.5 seconds to mute. 2 short beep sounds when muted, and Vol icon starts blinking. Repeat again to unmute.

(((Automatic Backlight

Use this function to turn on the display and key lights every time you touch keys except PTT. It goes off automatically after 5 seconds. It may become handy in the dark but consumes battery faster. See the Setup P.23 to activate.

(((Keypad Lock

This function electronically locks all keys (except for **[PTT]**, **[▲]/[▼]**, **[VOL/MUTE]**, **[MONI/SQL]**, **[H/L]**) to prevent unwanted pressing keys may change of the channel and function setting while operating.

Press and hold **[LOCK]** key for 1.5 seconds to active keypad lock, top right corner of LCD “” icon appears. Repeat above operation again to



o BASIC OPERATIONS

un-active keypad lock.

(((TX Power Selection

Under standby state, press **[H/L/LOCK]** key to switch high and low output power.

- When high power is selected nothing appears on the LCD.
- When low power is selected top left corner of LCD "LOW" icon appears.

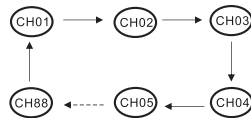
(((Scan Types

Scanning is an efficient way to search for busy channels automatically. You should set TAG channels before start scanning. Currently set weather channel is included in scanning when weather alert function is activated.

See the next page for TAG channel setting.

■ Normal Scan

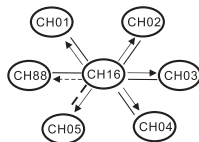
It searches through all TAG channels in sequence. However, unlike priority scan, Channel 16 is not monitored unless channel 16 is set as a TAG channel.



o BASIC OPERATIONS

■ 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.



(((Set TAG Channels

Edit the TAG (favorite or frequently used) channels as below. Channels that are not tagged will be skipped during scanning.

■ Single TAG channel

1. Press **[CH]** to select desired channel group.
2. Press **[▲]/[▼]** key to select the desired channel to be set as a TAG Channel.
3. Press and hold **[FAV/TAG]** for 1.5 seconds, to set the displayed channel as a TAG Channel.
 - “TAG” icon will appear in the function display.
4. Repeat above operation to cancel the TAG channel setting,
 - “TAG” icon will disappear.

■ All TAG channels

Hold **[FAV/TAG]** key and Power On the radio to clear all TAG channels in the selected channel group.

Repeat above operation to set all channels as TAG channels.

This function is not available in weather channel group.

○ BASIC OPERATIONS

(((Scan Operation

Set scan resume timer in the set mode.

1. Press **[SCAN]** to start normal scan or priority scan.

- “SCAN” icon 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.
- Press **[▲]/[▼]** key to sequentially select TAG channels, change the scanning direction or manually resume the scan.

2. Press either one of **[PTT]**, **[C/16]**, **[CH]** or **[TAG/FAV]** key to stop scanning.

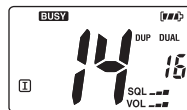
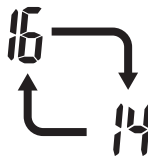
(((Dual-Watch

Dual watch: Watch and monitor in turns between current channel and Channel 16.

In function menu setup select Dual-Watch mode (refer to No.06 in P.23).

Hold **[SCAN/DUAL]** for 1.5 seconds to start dual watch, “DUAL” blinks when dual watch, a beep tone sounds when a signal is received on channel 16.

Press **[SCAN/DUAL]** or **[PTT]** key to cancel dual-watch.



Dual watch

○ BASIC OPERATIONS

(((Tri-Watch

Tri-watch: Watch and monitor in turns among current channel, Channel 16 and call channel.

In function menu setup select Tri-Watch mode (refer to No.06 in P.23).

Hold **[SCAN/DUAL]** for 1.5 seconds to start tri-watch, "TRI" blinks when tri-watch, a beep tone sounds when a signal is received on channel 16.

Press **[SCAN/DUAL]** or **[PTT]** key to cancel tri-watch.



Tri-watch

o FUNCTION MENU SETUP

To enter the Setup mode:

1. Turn on with **[MONI/SQL]** key pressed. All icons are displayed.
2. Release **[MONI/SQL]** key to display “on bP” .
3. Press **[MONI/SQL]** key to select a desired menu .
4. Press **[▲]/[▼]** key to select a desired setting parameter. Off is displayed as oF.
5. Press **[16/C]** key to set and exit the Setup mode.

Refer to the below table for details of menus, options and default values.

No.	Display	Menu	Parameter Options	Default Value
1	bP	Operation beep	On / Off / Us	On
2	AL	Weather Alert	On / Off	Off
3	Pr	Priority Scan	On / Off	Off
4	St	Scan Resume Timer	On / Off	Off
5	AS	Auto Scan	On / Off	Off
6	dt	Dual Watch/Tri-watch	d-DUAL / t-TRI	d-
7	Sq	Monitor Key	Pu / Ho	Pu
8	bL	Automatic Backlight	On / Off	On
9	LC	LCD Contrast	Hi / Lo	Hi
10	PS	Battery save	On / Off	On

○ FUNCTION MENU SETUP

No.	Display	Menu	Parameter Options	Default Value
11	SS	Squelch Sensitivity	On / Off	Off
12	LF	All Channel Low Power	On / Off	Off
13	AE	ATIS On/Off	On / Off	Off
14	FF	Registered ATIS number recall display (FF is displayed when not being programmed.)		
15	FA	LED flashing function	On / Off	Off

1. Operation Beep

Select off to mute key operation beeps. Select on to sound beeps of a same tone. Select Us to sound beeps of different tones assigned separately to each key.

2. Weather Alert

When there are significant weather information, the U.S.NOAA broadcast stations will transmit alarm weather. When the weather alert function is turned on, radio will sound the alarm at the same time “WXALT” symbol flashes. During the scan, the current weather channel in use will be scanned.

- With this function enabled, when weather channel selected, “WX ALT” icon displayed in the screen.

3. Priority Scan

The radio has 2 scan types, normal and priority scan. Normal scan searches all TAG channels in the selected channel group, priority scan sequentially searches all TAG channels and channel 16.

4. Scan Resume Timer

The scan resume timer can be set as a pause (OFF) or timer scan (ON).

o FUNCTION MENU SETUP

- **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.

5. **Auto Scan**

Automatically starts a normal or priority scan when no signal is received and no operation is performed for 30 seconds.

6. **Dual/Tri-watch**

Select either Dual-watch or Tri-watch. Refer to page 21, and 22 for details.

7. **Monitor Key**

The monitor key temporarily opens the squelch.

- **Pu(PUSH):** The monitor function is activated by holding down **[MONI]**. The squelch open while holding down the key.
- **Ho(Hold):** The monitor function is activated by holding down **[MONI]** for 1.5 seconds, the squelch stays open until any key is pressed.

8. **Automatic Backlighting**

Select ON to turn on the display and key lights every time you touch keys except PTT. It goes off automatically after 5 seconds. It may become handy in the dark but consumes battery faster.

9. **LCD Contrast Setting**

Check both indoor and outdoor to select the level of your preference. At any case it doesn't make a significant difference.

10. **Battery Save (BS)**

Activate the BS to reduce current drain by turning on and off in preset intervals. It is recommended that you select ON to obtain longer operating time, but may risk missing a initial word when a

○ FUNCTION MENU SETUP

signal is received in off interval. BS doesn't work while scanning, and resumes when 5 seconds are elapsed from the last transmission.

11. Squelch Sensitivity

Select ON to improve noise rejection so that the squelch is less affected by noise. However weaker signals may also be rejected and can't open squelch.

12. All Channel Low Power

Select ON to set output power of all channels except CH16 to low 1W.

This is another battery saving feature.

15. LED Flashing Function

A LED flashes at a transparent section on the bottom of the radio while floating in the water.

Like a flashing fishing float, it catches eyes in the dark and you can pick the radio out of water easily.

Select ON to activate. This function is valid even when the radio is turned off.

The flashing light turns off automatically when it is retrieved from the water and becomes dry.

The LED may flash when the radio is wet by rain or splashing water but this is not a defect.

It consumes battery so it is recommended that you wipe the water off to dry the rear surface of the radio with clean dry cloth.

NOTE: Menu 13 and 14 are ATIS (The Automatic Transmitter Identification System) related and made available after dealer programming to certain areas of distribution. You may not even see these menu in the set mode depending on your dealer programming. At any case the function is disregarded regardless of On/Off setting without dealer preprogramming. The manufacturer does not disclose such programming software to public. Please contact your dealer for details of programming.

○ OPTIONAL ACCESSORIES

- EA-257 Whip antenna
- EBP-104 Li-ion battery pack (7.4V,1200mAh)
- EDC-294 Rapid charger
- EDC-298 AC Adapter
- EBC-54 Belt Clip
- EME-32A Earphone Microphone (PTT / Mic unit is not water-tight)
- EME-36A Earphone Microphone (PTT / Mic unit is not water-tight)
- EMS-71 Speaker Microphone (IP 67 dust/waterproof)

○ SPECIFICATIONS

General Specification	
Frequency Range	TX: 156.025-157.425MHz
	RX: 156.050-163.275MHz
Type of Emission	FM (16K0G3E)
Frequency Stability	±10 PPM
Battery Pack	1200mAh Li-ion (DC 7.4V) (8 hours with TX5 / RX5 / Stand-by 90 cycles)
Operating Temperature Range	-20°C~ +60°C
Dimensions (W × H × D)	63mm × 138mm × 43mm
Weight	288g (With battery, antenna, belt clip)

Receiving Specification	
Receive Sensitivity	≤0.22uV
Squelch Sensitivity	≤0.22uV
Signal-to-noise Ratio	≥40dB
Adjacent Channel Selectivity	≥70dB
Spurious Response Interference Rejection	≥70dB
Intermodulation Rejection	≥68dB
Audio Output Power	≥0.5W (10%)

Transmitting Specification	
Output Power	5W/1W
Maximum Frequency Deviation	±5kHz
Spurious Emissions	≥68dB
Adjacent Channel Power	≥70dB
Audio Harmonic Distortion	≤10%

○ VHF MARINE CHANNEL LIST

Channel number			Frequency(MHz)		Channel number			Frequency(MHz)		Channel number			Frequency(MHz)		Channel number			Frequency(MHz)						
USA	INT	CAN	Transmit	Receive	USA	INT	CAN	Transmit	Receive	USA	INT	CAN	Transmit	Receive	USA	INT	CAN	Transmit	Receive	USA	INT	CAN	Transmit	Receive
	01	01	156.050	160.650		21	21	157.050	161.650	68	68	68	156.425	156.425	86A			157.325	157.325					
01A			156.050	156.050	21A		21A	157.050	157.050	69	69	69	156.475	156.475	87	87	87	157.375	161.975					
	02	02	156.100	160.700			21b	RX only	161.650	70	70	70	RX only	156.525	87A	87A	87A	157.375	157.375					
	03	03	156.150	160.750		22		157.100	161.700	71	71	71	156.575	156.575	88	88	88	157.425	162.025					
03A			156.150	156.150	22A		22A	157.100	157.100	72	72	72	156.625	156.625	88A	88A	88A	157.425	157.425					
	04		156.200	160.800		23	23	157.150	161.750	73	73	73	156.675	156.675										
		04A	156.200	156.200	23A			157.150	157.150	74	74	74	156.725	156.725										
	05		156.250	160.850	24	24	24	157.200	161.800	75* ¹	75* ¹	75* ¹	156.775	156.775										
05A		05A	156.250	156.250	25	25	25	157.250	161.850	76* ¹	76* ¹	76* ¹	156.825	156.825										
06	06	06	156.300	156.300			25b	RX only	161.850	77* ¹	77	77* ¹	156.875	156.875										
	07		156.350	160.950	26	26	26	157.300	161.900		78		156.925	161.525										
07A		07A	156.350	156.350	27	27	27	157.350	161.950	78A		78A	156.925	156.925										
08	08	08	156.400	156.400	28	28	28	157.400	162.000		79		156.975	161.575										
09	09	09	156.450	156.450			28b	RX only	162.000	79A		79A	156.975	156.975										
10	10	10	156.500	156.500		60	60	156.025	160.625		80		157.025	161.625										
11	11	11	156.550	156.550		61		156.075	160.675	80A		80A	157.025	157.025										
12	12	12	156.600	156.600	61A		61A	156.075	156.075		81		157.075	161.675										
13 ¹	13	13 ¹	156.650	156.650		62		156.125	160.725	81A		81A	157.075	157.075	Weather Channel			Frequency(MHz)						
	14	14	156.700	156.700			62A	156.125	156.125		82		157.125	161.725				1	RX only	162.550				
15 ¹	15 ¹	15 ¹	156.750	156.750		63		156.175	160.775	82A		82A	157.125	157.125				2	RX only	162.400				
16	16	16	156.800	156.800	63A			156.175	156.175		83	83	157.175	161.775				3	RX only	162.475				
17 ¹	17	17 ¹	156.850	156.850		64	64	156.225	160.825	83A		83A	157.175	157.175				4	RX only	162.425				
	18		156.900	161.500	64A		64A	156.225	156.225			83b	RX only	161.775				5	RX only	162.450				
18A		18A	156.900	156.900		65		156.275	160.875	84	84	84	157.225	161.825				6	RX only	162.500				
	19		156.950	161.550	65A	65A	65A	156.275	156.275	84A			157.225	157.225				7	RX only	162.525				
19A		19A	156.950	156.950		66		156.325	160.925	85	85	85	157.275	161.875				8	RX only	161.650				
20	20	20 ¹	157.000	161.600	66A	66A	66A ¹	156.325	156.325	85A			157.275	157.275				9	RX only	161.775				
	20A		157.000	157.000	67 ¹	67	67	156.375	156.375	86	86	86	157.325	161.925				10	RX only	163.275				

¹Only a low power.

◦ TROUBLESHOOTING

These types of errors are generally due to improperly connected, the operation caused by incorrect setting, or operator error caused due to incomplete programming. These problems are usually not caused by circuit failure. Before suspect intercom failure, please refer to the relevant section of this manual.

Problems	Possible Cause	Solutions
Cannot be turned on	<ul style="list-style-type: none"> • The battery is exhausted. • Battery pack is not correctly inserted. 	<ul style="list-style-type: none"> • Recharge the battery pack. • Correctly insert the battery pack.
Transmitting is incapable, or high power transmitting is incapable	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Switch to channels without output power limited. • Recharge the battery pack. • Press [H/L] to select high output power. • Quit weather channel or CH 70.
The display channel cannot be changed	<ul style="list-style-type: none"> • Key lock function is activated. 	<ul style="list-style-type: none"> • Hold [LOCK] key for 1.5 seconds to unlock.
Scan does not start	<ul style="list-style-type: none"> • No tag channels are set. 	<ul style="list-style-type: none"> • Set desired channels as tag channels.
Cannot communicate in same channel	<ul style="list-style-type: none"> • A duplex channel is selected. • Improper channel group is set. 	<ul style="list-style-type: none"> • Make sure channels and groups.
No prompt tone	<ul style="list-style-type: none"> • Prompt tone function is turned off. 	<ul style="list-style-type: none"> • Turn on the prompt tone function in set mode.
No sound from loudspeaker	<ul style="list-style-type: none"> • The squelch level is too high. • Volume level is too low. • Speaker has been exposed to water. 	<ul style="list-style-type: none"> • Set suitable squelch level. • Press [VOL] key, then [▲]/[▼] to adjust volume. • Discharge water from speaker grill.

■ IPX7 water proof

7: No water penetration / Submerge the device for 30 minutes at a depth of 1 meter from the fresh water's surface.

The IPX7 designation provides for limited fresh water proofing of the radio, antenna and battery pack when integrated, per specified above. This compatibility is factory guaranteed for a period of one year provided all specified conditions of use are respected, any accessories connected must be specified genuine Alinco accessories and the device has not been disassembled by the consumer. The device is designed to remain operational when used in rain, severe weather or in accidental cases of dropping it in wet place when used in extreme conditions. Warranty will not cover devices that are damaged due to negligence or misuse of the product. A periodical, professional maintenance is recommended when the ingress protection is very important to you.

Note: We guarantee IPX7 only when the genuine EBP-104 battery pack and MIC-SP jack cover are tightly assemble to body. The main unit and the battery pack alone are not watertight.

[MEMO]

ALINCO, INC.

Yodoyabashi Dai-bldg 13F

4-4-9 Koraibashi, Chuo-ku, Osaka 541-0043 Japan

Phone: +81-6-7636-2362 Fax: +81-6-6208-3802

<http://www.alinco.com>

E-mail: export@alinco.co.jp



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