

**ALINCO, INC.**

UHF DIGITAL TRANSCEIVER

# **DJ-MD40**

## **Instruction Manual**

FCC ID:PH3DJ-MD40

## SAFETY TRAINING INFORMATION



**WARNING** Our ALINCO,INC. radio generates RF electromagnetic energy during transmit mode. This radio is designed for and classified as "Occupational Use Only", meaning it must be used only during the course of employment by individuals aware of the hazards, and the ways to minimize such hazards. This radio is NOT intended for use by the "General Population" in an uncontrolled environment. This radio has been tested and complies with the FCC RF exposure limits for "Occupational Use Only". In addition, our ALINCO,INC. radio complies with the following Standards and Guidelines with regard to RF energy and electromagnetic energy levels and evaluation of such levels for exposure to humans:

- ◆ IEEE Std. 1528:2013 and KDB447498, Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
- ◆ American National Standards Institute (C95.1-1992), IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.
- ◆ American National Standards Institute (C95.3-1992), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields-RF and Microwave.



**CAUTION** The information listed above provides the user with the information needed to make him or her aware of RF exposure, and what to do to assure that this radio operates with the FCC RF exposure limits of this radio.

#### Electromagnetic Interference/Compatibility

During transmissions, ALINCO, INC. radio generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radio in areas where signs are posted to do so. DO NOT operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, aircraft, and blasting sites.

#### Occupational/Controlled Use

The radio transmitter is used in situations in which persons are exposed as consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

#### Attention:

This radio complies with IEEE and ICNIRP exposure limits for occupational/controlled RF exposure environment at operating duty factors of up to 50% and is authorized by the FCC for occupational use only. An appropriate warning label is affixed to all units. In order to comply with RF exposure requirements, a minimum distance of 2.5cm must be maintained when held-to-face, and body-worn operations are restricted to the approved original accessories (belt clip).

Do not use this device when antenna shows obvious damages.

This product is compliance to FCC RF Exposure requirements and refers to FCC website

<https://apps.fcc.gov/oetcf/eas/reports/GenericSearch.cfm> search for FCC ID:PH3DJ-MD40 to gain further information include SAR Values.

## **SAFETY INFORMATION**

The transceiver are designed with advanced technology. Please observe the following precautions to prevent personal injury and ensure the safety of transceiver usage.

1. Keep the transceiver and accessories away from children.
2. Please do not try to open or modify the transceiver.
3. Please use correct battery and charger to avoid damage.
4. Please use correct antenna to ensure the communication distance.
5. Please do not expose the transceiver to long period of direct sunlight, or place it close to heat sources.
6. Please do not put the transceiver in excessively dusty or humid areas.
7. Do not use harsh chemicals, cleaning solvents to clean the transceiver.
8. Do not transmit without antenna.
9. When using this transceiver, we recommend transmitting for 1 minute then receiving for 4 minutes. Continuous transmitting for long periods on high power will heat the back of the transceiver. Do not place the transceiver's hot back close to any plastic surface.
10. If any abnormal odor or smoke detected coming from the transceiver, turn off the power and take off the battery pack. Then contact local dealers.
11. We and our distributors will offer safety/RF exposure trainings to the users after purchasing the devices.

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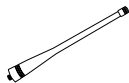
## ○ UNPACKING

Carefully unpack the transceiver. We recommend you to identify the items listed in the following table before discarding the packing material. If any items are missing or have been damaged during shipment, please contact dealers immediately.

### Supplied Accessories

| Item                | Quantity |
|---------------------|----------|
| Antenna             | 1        |
| Li-ion Battery Pack | 1        |
| Battery Charger     | 1        |
| AC Adaptor          | 1        |
| Belt Clip           | 1        |
| Hand Strap          | 1        |
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### Standard Accessories



Antenna\*1  
QA13U (400-480MHz)



Li-ion Battery Pack



Charger



AC Adaptor



Belt Clip

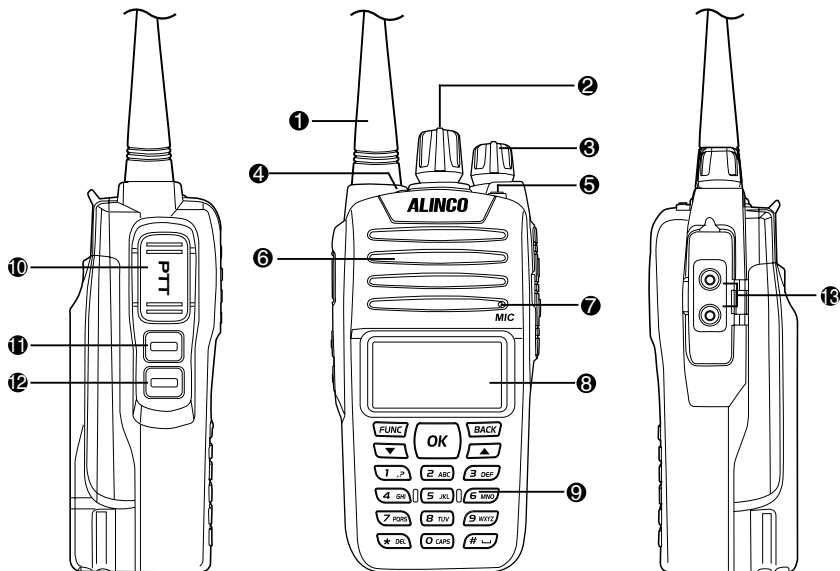


Instruction  
Manual



Hand Strap

## ◦ GETTING ACQUAINTED



### ① Antenna

② **Channel Selector Knob:** Turn the selector knob to select desired channel. Turn clockwise to increase channel, anticlockwise to decrease channel.

③ **POWER / VOLUME Switch:** Turn clockwise to switch on the transceiver, and turn anticlockwise till hearing "Click" to switch off the transceiver. After switching on the transceiver, turn clockwise to increase the volume and anticlockwise to decrease the volume.

④ **Top key:** Short press to close arm function, long press to open the arm function.

⑤ **Status indicator:** Indicate different working status, like : receive/ transmit or scan.

### ⑥ Speaker

### ⑦ MIC

⑧ **LCD display:** display the frequency and difference working status.

⑨ **Keypad:** Input the frequency/edit message by keypad.

⑩ **PTT Key:** When you are making a call, please press and hold this key to speak into the microphone, release the key to receive.

⑪ **PF1 Key:** Short press to open or close scan, long press to select H/L power.

⑫ **PF2 Key:** Short press to enter into monitor status ,long press to enter into dial single calling contact person status.

### ⑬ Additional Microphone / Speaker Jack

## ⦿ ((( Keypad instruction

**[FUNC]** key: FUNC key and keypad operate together can realize kinds of function, long press this key to enter into function menu.

**[Back]** key: You can return one by one by press this key.

**[OK]** key: to setting the desire function, can confirmed by press this key.

**[Up]/[Down]** key : to select the desired function by press this key.

**Keypad** : under VFO mode, you can input the desired frequency by keypad. input the desired characters in message edit status and input the desired contact name under contact person edit status .

### ((( Turn ON/Off the Radio

In closed status, turn on the radio by turning the **[Power/Volume]** switch clockwise, the LCD display "**DJ-MD40**" and a click is heard, namely, turn on the radio.

In standby status, turning the **[Power/Volume]** switch anticlockwise after a click is heard, and LCD display "**Power Off**", namely, turn off the radios.

### ((( Adjust Volume

In standby, Rotate the **[Power/Volume]** knob to adjust the volume. Turn clockwise to increase the volume and counterclockwise to decrease the volume.

### ((( Mode Switch

In standby mode, press **[FUNC]** key, the LCD display "**F**" icon, and press **[DOWN]** key again to switch, MR mode or VFO mode.

### ((( Channel Select

In standby mode, Rotate the channel switch to adjust the desired channels. Turn clockwise to select the next channel and counterclockwise return to present channels.

## ◦ BASIC OPERATIONS

### Zone Select

Press **[FUNC]** , till "**beep**" sound heard, namely, enter into function menu, select zone items by **[UP]/[DOWN]** key , and press **[OK]** key enter into Zone selective, select the desired zone by **[UP]/[DOWN]** key, press **[OK]** key to confirm and return to standby statu.

### Frequency Setting

In standby mode, Rotate the channel switch to select desired frequency. Turn clockwise to increase one time step values and counterclockwise decrease one time step values.

In standby mode, input 9 number, then you can setting current frequency to the desired frequency, such as, when you select 450MHz. you can input 45 and 0000000 by **Keypad** .

### Transmitting

In standby, after setting the desired transmit frequency or channels, and hold on **[PTT]** key, and speak into microphone. Please keep around 2.5-5cm distance between microphone and your lip. And please speak in normal tone to make the receiver obtain best tone quality.

### ((( Digital Call

Each channel can be setting communication type as digital communications, digital call have single call, group call and full call and so on.

**Single call:** single call is a call from an individual radio to another individual radio. with same frequency but difference ID, color code or encryption radios can not communicate mutual.

**Group call:** group call is a call from an individual radio to every radio on the same group. When TX, every radios on the same radio can receive the call simultaneously.

**ALL call:** all call is a call from an individual radios to every radio on the same frequency/channel. When TX. Every radios on the same frequency/channels can receive the call simultaneously.

### ((( Receiving Call

Rotate channel knob to select desired received channels, after received itself ID and associated with the settings (color code, key, group) match signal, namely can heard each other's calls, otherwise, radio will remain muted.

### ((( Keypad Lock

In the standby mode, Hold down **[\*]** key until LCD display "**keypad locked**", namely, radio keypad is locked. Under the keypad is locked, press the numeric keypad is invalid.

## ◦ BASIC OPERATIONS

### ((( Unlock the keypad

The keypad is locked in a state press **[OK]** key and then press the **[\*]** key to display the "**Keypad unlocked**" or unlock the keypad.

### ((( Send DTMF Signaling

In the analog channel, can send the desired DTMF by the following operation way.

1. Press and hold the **[PTT]** key, then press the number keys to send desired DTMF signaling.
2. In Standby mode, press the **[#]** key, after clear LCD screen, input the desired DTMF signaling by numeric keypad, then press **[PTT]** key to send DTMF signaling.
3. Under analog channel, press the **[PTT]** button to send a DTMF signaling.

The [TK] key, [PF1] key, [PF2] key short and long key operation and key combinations operation (FUNC + number keys) can be set as shortcuts functions below :

### ((( All tone Switch

In Standby mode, press the "**all tone switch**" key or key combination to open / close radio all tone.

### ((( Emergency mode ON

In Digital channel, press the [**emergency mode ON**] key or key combination to open the emergency alarm.

### ((( Emergency mode Off

In the state of emergency mode open, press the [**emergency mode Off**] key or key combination to close the emergency alarm.

## Shortcuts

### ((( Power Selective

In Standby mode, press the **[Power Select]** key or key combination, you can select the desired power. This radio has 4 level power for choose , the screen displays different icons representing different power "H" stands for high power, "M" stands for the middle power, "L" stands for the low-power, "X" stands for the very low power.

### ((( Monitor

In Standby mode, press the **[monitor]** key or key combination, you can monitor for weak and cannot cancel muting channel. Repeat the operation returns to the standby state.

*Note: In the analog channel and does not receive a matching signal, use this function ,the green LED indicator will light up and output noise. When the digital channel and does not match the received signal, the green LED will light up, but no noise output.*

### ((( PTT 1-6

In Standby mode, press the "PTT 1-6" key or key combination to send desired signaling. Use this function under analog channel can send DTMF signaling, use this function under the digital channel can send short messages or contacts.

### ((( Repeater/ talk-around

In Standby mode, press the " **Repeater/ talk-around** " key or key combination to switching the current channel as repeater or talk-around mode.

### ((( Scan On / Off

In Standby mode, press the "**Scan ON / OFF**" key or key combination, you can turn on / off the scan function.

### ((( Encryption On / Off

In the digital channel, press the "**Encryption On / Off** " key or key combination to open or close the digital encryption.

## ○ FUNCTION MENU INTRODUCTION

### ((( VOX Transmit

In Standby mode, press the "**VOX Transmit**" key or key combination to open VOX features in current channel. When you turn on the VOX Transmit function, the user can start to transmit through a suitably large voice. Repeat the above steps to turn off VOX features.

### ((( Single Call Manual Dialing

In Digital channel, press the "**Single call Manual Dial**" key or key combination, you can quickly enter manual dialing state, after enter the desired contact person by numeric keypad, then press the **[PTT]** key to call the desired contact person, press **[OK]** key to call the desired contact person to call prompt, radio detection, remote monitoring, , radio stun/kill and other operations

### ((( Working Alone

In Digital channel, press the "**Single call Manual Dial**" key or key combination to open Working alone function, when this feature is turned on, the radio will start the alarm feature when working alone exceeds pre-set time.

### ((( Recording Switch

In Digital channel, press "**Recording Switch**" key or key combination to enable / disable recording function.

### ((( Recording Playback

In Digital channel, press the "**Recording Playback**" key or key combination, you can play recording, play a parts when you press each time.

### ((( Delete All Recordings

In Digital channel, press the "**Delete all recordings**" key or key combination, you can delete all recordings.

### ((( Contact List

This menu allows you to manually dial, contact person select or New setup contact person, and for the single call contact person to call prompt, radio detection, remote monitoring, radio stun/kill and other operations.

## ◦ **FUNCTION MENU INTRODUCTION**

### ((( **Scanning**

This menu allows you to turn on / turn off scan, view the current channel where the scan list channel, set the scan priority.

### ((( **ZONE Selection**

This radio has 1000 channels can be divided into multiple zones, each up to 16 channels, the user can use this menu to select the desired area.

### ((( **Text Message**

The radio supports text messaging, users can send and receive text messages from this menu, as well as related operations of short message function.

### ((( Call Record

This menu can be dialed, received, missed calls and other calls inquiries.

### ((( Setup

This menu can be talk-around, tone, TX power, backlight, SQL level, boot screen, open the keypad lock, language selection, LED indicator light, power-on password, recording, time setting, mode, power-saving functions and other related settings. And can through Information menu to check the radio ID, CPS version, software version, etc.

## TECHNICAL SPECIFICATIONS

| General               |                                         |
|-----------------------|-----------------------------------------|
| Frequency Range       | Digital:400-480MHz<br>Analog:400-480MHz |
| Channel Capacity      | 1000 channels                           |
| Channel Spacing       | 12.5KHz                                 |
| Phase-locked Step     | 5KHz, 6.25KHz                           |
| Operating Voltage     | 7.4V DC $\pm 20\%$ /(2600mAh)           |
| Frequency Stability   | $\pm 2.5$ ppm                           |
| Operating Temperature | -20℃~ +55℃                              |
| Size                  | 130×61×44mm (with battery pack)         |
| Weight                | 257g (with battery pack, antenna)       |

| Receiving Part               |                                                    |
|------------------------------|----------------------------------------------------|
| Sensitivity(12dB SINAD)      | $\leq 0.35\mu\text{V}$                             |
| Digital Sensitivity          | 0.3uV/-117.4dBm (BER 5%)<br>0.7uV/-110dBm (BER 1%) |
| Adjacent Channel Selectivity | $\geq 60\text{dB}$                                 |
| Intermodulation              | $\geq 60\text{dB}$                                 |

|                    |                    |
|--------------------|--------------------|
| Spurious Rejection | $\geq 70\text{dB}$ |
| Blocking           | 84db               |
| Hum & Noise        | $\geq 40\text{dB}$ |
| Audio Distortion   | $\leq 5\%$         |
| Audio Power Output | 1000mW/16Ω         |

| Transmitting Part          |                                                            |
|----------------------------|------------------------------------------------------------|
| Power Output               | Digital: 5W/2.5W/1W/0.2W<br>Analog: 5W/2.5W/1W/0.2W        |
| Modulation                 | $\pm 2.5\text{KHz}@12.5\text{KHz}$                         |
| Adjacent Channel Power     | $\geq 70\text{dB}$                                         |
| Hum & Noise                | $\geq 40\text{dB}$                                         |
| Spurious Emission          | $\leq -36\text{dB}$                                        |
| 4FSK Digital Modulation    | 12.5KHz ( data ) 7K60FXD<br>12.5KHz ( data+voice ) 7K60FXW |
| Analog Emission Designator | FM 12.5KHz:11K0F3E                                         |
| Audio Distortion           | $\leq 5\%$                                                 |
| Error rate                 | $\leq 3\%$                                                 |
| Digital Data rate          | 9600bps                                                    |