

# User's Manual

## DMR Digital Portable Radio

### D5X



## **Acknowledgments!**

Thank you for purchasing Talkpod DMR Digital Radio. As a product built to the DMR standard, it is endowed with ergonomic design, all-round digital functions and remarkable quality to refresh your experience and enable you to be responsive to emergent situations.

To derive optimum performance from your product, please read this manual and the supplied Safety Information Booklet carefully before use.

Please check the box of this product and see if there are signs of damage.

## **Need-To-Know**

This radio is not intended for use by general population in an uncontrolled environment. It is only for occupational use and only applied to work-related conditions.

Only a professional technician is allowed for maintenance.

It is important that a user keeps good understanding and knowledge of general danger information about Digital Radio.

This manual is suitable for using the model of TP-D5X.

## Supplied Accessories



## Audio Accessories

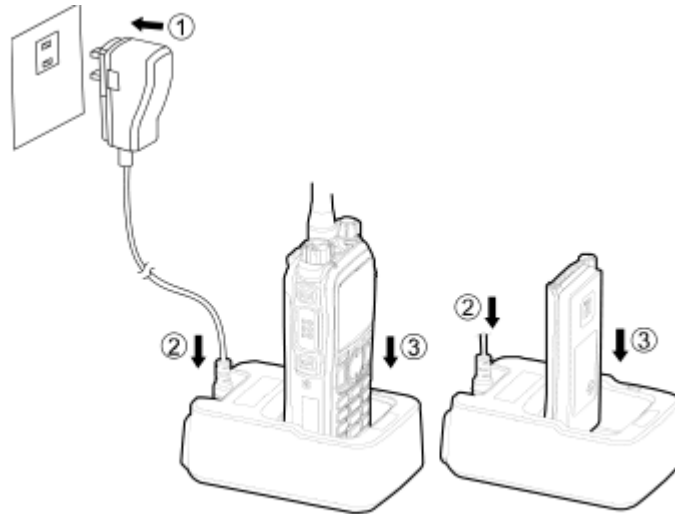
## Charging Operation

If the transceiver indicator displays , it means the battery pack is out of power, please charge it.

Please always use the original charger. The charger's indicator shows the charging status below.

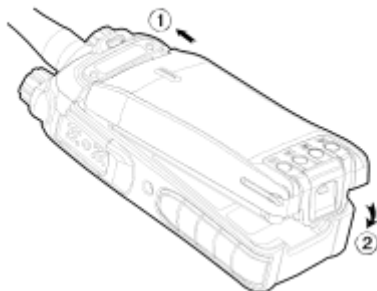
| INDICATOR DISPLAY | STATUS    |
|-------------------|-----------|
| RED               | CHARGING  |
| GREEN             | COMPLETED |

## Charging Diagram



## Attaching the battery

1. Insert the battery into top of the radio. See arrow 1 .
2. Slightly press the bottom of the battery until a click is heard. See arrow 2



To remove the battery, turn off the radio first. Then slide the battery latch upwards to unlock the battery.

## Attaching the Audio Accessory/Programming Cable

1. Open the accessory jack cover.
2. Align the plug with the accessory jack.
3. Tighten the screw on the plug.

## Install antenna

Hold the radio, screw the antenna into the connector on the top of the radio.  
Hold the antenna and turn it clockwise until being tight.

Note: Don't use the antenna as handle, keychain or speaker/microphone hook, it will damage the antenna and affect the function of the radio.



## BASIC OPERATIONS

### Turning the Radio On/Off

Rotate the Radio On-Off/Volume Control knob clockwise/counter-clockwise until a click is heard to turn the radio on/off.

### Adjusting the Volume

After turning the radio on, rotate the Radio On-Off/Volume Control knob clockwise to increase the call volume, or counter-clockwise to decrease it.

### Selecting a Zone

A zone is a group of channels exhibiting the same property, and is programmed by your dealer. The radio supports up to 2 zones, each with a maximum of 16 channels. You may select a zone through any of the following methods: Through the function keys

You may quickly toggle to your desired zone by pressing the programmed Zone Up or Zone Down key.

### Selecting a Channel

Rotate the Channel Selector knob to select a desired channel.

### Switching the Channel Mode

Each channel can be programmed as either analog channel or digital channel. If the current zone

Includes both analog and digital channels, you may quickly switch between digital and analog channels.

## **Receiving and Making A CALL**

To ensure an optimal volume of the receiving radio, hold the radio approximately 2.5 to 5 centimeters away from your mouth.

### **Private Call**

1. Rotate channel switch to desired channel from user ID
2. Keep the radio 1-2 feet (2.5-5cm) away from mouth.  
If the radio program the "Free Channel Indication", release PTT to get a short tone, that means it is free channel and wait for your answer.
3. Press PTT to answer LED light red.
4. Talk to microphone after active the tone of allowing calling tone.
5. Release PTT to receive information.
6. Radio automatically over the calling if there is no operation with permitted period.  
If the radio program the "Free Channel Indication", release PTT to get a short tone, that means it is free channel and wait for your answer. Automatically over the calling if there is no operation with permitted period.
7. Radio sounds a short tone.

### **Receiving and Responding to a Private Call**

1. LED light green.
2. Keep the radio 1-2 feet (2.5-5cm) away from mouth.  
If the radio program the "Free Channel Indication", release PTT to get a short tone, that means it is free channel and wait for your answer.
3. Press PTT to answer LED light red.
4. Talk to microphone after active the tone of allowing calling tone.
5. Release PTT to receive information.
6. Automatically over the calling if there is no operation with permitted period.
7. Radio sound a short tone.

### **Transmitting a Group Call**

1. Program the radio as a group member to transmit any information to this group.
2. Rotate channel switch to desired contact ID or channel.
3. Keep the radio 1-2 feet (2.5-5cm) away from mouth.  
If the radio program the "Free Channel Indication", release PTT to get a short tone, that means it is free channel and wait for your answer.
4. Press PTT to answer LED light red.
5. Talk to microphone after active the tone of allowing calling tone.
6. Release PTT to receive information.
7. Radio automatically over the calling if there is no operation with permitted period.  
If the radio program the "Free Channel Indication", release PTT to get a short tone, that means it is free channel and wait for your answer. Automatically over the calling if there is no operation with permitted period.

## Receiving and Responding to a Group Call

Program the radio as a group member to receive any information from this group calling.

1. LED light green.
2. Keep the radio 1-2feet (2.5-5cm) away from mouth.  
If the radio program the “Free Channel Indication”, release PTT to get a short tone, that means it is free channel and wait for your answer.
3. Press PTT to answer LED lingt red.
4. Talk to microphone after active the tone of allowing calling tone.
5. Release PTT to receive information.
6. Automatically over the calling if there is no operation with permitted period.

## Transmitting an All Call

Program the radio with this function and transmit information to all users.

1. Rotate channel switch to desired channel from contact ID
2. Keep the radio 1-2 feet (2.5-5cm) away from mouth.  
If the radio program the “Free Channel Indication”, release PTT to get a short tone, that means it is free channel and wait for your answer.
3. Press PTT to answer LED lingt red.
4. Talk to microphone after active the tone of allowing calling tone. All the users on this channel cannot answer the calling.

## Receiving an All Call

All call is transmitting information to all the radios. Especially for releasing special notice.

When receiving:

1. Radio sound a tone and LED light green.
2. Radio automatically over the calling if there is no operation with permitted period.  
If the radio program the “Free Channel Indication”, release PTT to get a short tone, that means it is free channel and wait for your answer.

**NOTE:** When receiving all call, you change to another channel, then will stop receiving the all calling. And during receiving, you cannot use any programmed keys until calling is over.

## Calls on Analog Channels

To transmit on an analog channel, hold down the PTT and speak into the microphone. To receive, release the PTT key.

## Message

### Send Pre-set Message

You can at most pre-set 50 pieces message.

1. Choose desired contact to send a pre-set message.
2. LED light red.
3. Two tons of “DiDi” means sending message successfully. A lower tone means no message send.

### Encryption

This function is only available for digital channel.

You can at most preset 16 list encryption, encrypted code(4 byte)by program software and enable/disable this function.

### Emergency Alarm

Press this programmed key to active emergency alarm.

## Scan

### Scan List

Create the scan list and allocate to single channel/contact list.

Through cycle scanning the listed channel/contact list to search the any communication channel. It supports at most 250 list and 16 members for each list.

### Scan

LED light red when scanning.

Two methods of scanning:

1. Main Channels(by manual):  
Scan all channel/contact groups from all scanning lists.  
When scanning, your radio automatically starts from the last scanned channel, contact list or starting scanning channel.
2. Automatically manual:  
Scanning start from the channel which be active automatically scanning.

### Scan On/Off

1. Choose automatically scanning channel by press programmed key or rotate channel switch.
2. When scanning active, LED light red and sound a confirm tone. Or stop scanning, LED goes off and sound a negative tone.

### Double Priority Channel

When radio enables this function, scan the priority channel and normal channel at the every scanning with recycle scanning.

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## **During Scanning, Answer Calling**

Stop at the detected active channel/contact list.

Radio keeps at this stop channel that is so called "Free Time" programmed period.

1. Keep the radio 1-2feet (2.5-5cm) away from mouth.  
If the radio program the "Free Channel Indication", release PTT to get a short tone, that means it is free channel and wait for your answer.
2. Within the permitted period, Press PTT to call, LED light red.
3. Talk to microphone after active the tone of allowing calling tone.
4. Release PTT to receive information.
5. Radio automatically over the calling if there is no operation with permitted period.

## **Settings**

### **SQL**

You can adjust the SQL to filter lower signal calling or channels with background noise is higher than normal value.

Normal: default value.

High: filter no use calling or background noise, but may also filter the calling from long distance.

1. Program the SQL key.
2. A positive tone means high SQL; a negative tone means normal SQL.

### **High/Low Power**

High power enables communication with long distance radio. Low power enables communication with short distance radio.

1. Program High/Low power key.
2. A positive tone means radio transmit at the low power; A negative tone means radio transmit at the high power.

### **VOX**

This function enables your radio to make a call with a programmed channel. No matter when the accessories with VOX function detect the signal, radio will transmit the information within programmed period.

Press PTT to disable VOX function.

Operate follow step to re-start the VOX:

Turn off the radio and power on again. Or rotate channel switch to another one. Or operate the below.

NOTE: Enable or disable this function to those active radios.

1. Program the key with VOX function and can turn on/off.
2. Talk to microphone after active the tone of allowing tone.

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## **Tone/Beeper ON/OFF**

Enable/disable the key with tone/beeper if necessary.

1. Program the key with tone ON/OFF function.
2. A positive tone means turn on beeper/tone function; A negative tone means turn off beeper/tone function.

## **Check Battery**

LED light yellow: charging

LED light green: fully charged.

Press programmed key to check the battery capacity by the beeper.

1. Very low power: "Diling Diling" tones.
2. High: Three tones of "Diling Diling".
3. Middle: Two tones of "Diling Diling".
4. Low: One tone of "Diling Diling".

## Specifications

|                             |  |
|-----------------------------|--|
| General                     |  |
| Model Number                | TP-D5X   |
| Frequency Range             | UHF: 400-470MHz  |
| Channel Capacity            | 32   |
| Zone Capacity               | 2  |
| Channel Spacing             | FCC FM:12.5KHz; 4FSK:12.5 KHz<br>CE FM:12.5KHz/25KHz; 4FSK: 12.5KHz      |
| Increased Capacity          | TDMA divides a 12.5 kHz channel into two alternating time slots.         |
| Operating Voltage           | 7.4V   |
| Battery                     | 1650mAh Li-Ion Battery   |
| Battery Life(5/5/90)        | 11Hrs @Analog; 16Hrs @Digital  |
| Frequency Stability         | $\pm 1.5$ ppm  |
| Antenna Impedance           | 50 $\Omega$  |
| Dimensions (H×W×D)          | 135x60x28(mm)  |
| Weight                      | 256g   |
| Environmental               |  |
| Operating Temperature       | -10°C to 55°C  |
| Storage Temperature         | -40°C to 85°C  |
| Operating Humidity          | 5% - 95% RH  |
| Transmitter                 |  |
| RF Power Output             | UHF: High 4W - Low 1W  |
| 4FSK Digital Modulation     | 12.5KHz Data Ony:7K6 $\Phi$ FXD;<br>12.5KHz Data & Voice: 7K6 $\Phi$ FXE |
| Conducted/Radiated Emission | -36dBm<1GHz<br>-30dBm>1GHz   |
| FM Hum & Noise              | 12.5KHz @11K0F3E   |
| Adjacent Channel Power      | 60dB @12.5KHz; 70dB @20/25KHz  |
| Audio Response              | +1~-3dB  |
| Audio Distortion            | $\leq 5\%$   |
| Digital Vocoder Type        | AMBE++ or AMBE+2TM   |
| Digital Protocol            | ETSI-TS102 361-1,2&3   |
| Receiver                    |  |
| Sensitivity (Analog)        | 0.35 $\mu$ V/-116dBm (SINAD);<br>0.22 $\mu$ V/-120dBm (Typical)          |
| Sensitivity (Digital)       | 0.35 $\mu$ V/-117dBm (SINAD);<br>0.22 $\mu$ V/-120dBm (Typical)          |
| Rated Audio Power Output    | 1W   |
| Rated Audio Distortion      | $\leq 3\%$   |
| Audio Response              | +1 ~ -3dB  |
| Conducted Spurious Emission | $\leq -57$ dBm   |

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NOTE: Specifications will be revised without notice due to technical improvement. Thank you.

### **Trouble shooting guide**

| Troubles  | Solution   |
|---|--|
| No Electrical Source  | 1. The battery has been exhausted.<br>Replace the battery.<br>2. The battery is installed incorrectly.<br>Remove it and install again. |
| The operating time becomes short, even the battery is fully charged | Replace the battery  |
| Not able to communicate with the transceivers of the same group     | 1. Confirm the QT/DQT and frequency are the same<br>2. The distance is outside of range  |
| The voice of another group can be heard                             | Change all QT/DQT of the group   |
| Noise is always heard   | The distance is outside of range, turn on the radio in nearer range and try again  |

## Warning Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## **RF Energy Exposure Awareness and Control Information and Operational Instructions for Occupational Use**

Notice: this radio is intended for use in occupational/controlled conditions where users have full knowledge of their exposure and can exercise control over their exposure to meet the occupational limits in FCC and International standards. This radio device is NOT authorized for general population consumer use.

### **Federal Communication Commission (FCC) Regulations**

When DMR Digital Portable Radio used as a consequence of employment, the FCC requires users to be fully aware of and able to control their exposure to meet occupational requirement.

Exposure awareness can be facilitated by the use of a product label directing users to specific user awareness information. Your DMR Digital Portable Radio has a RF Exposure Product Label.

Also, your DMR Digital Portable Radio user manual includes information and operating instructions required to control your RF exposure and satisfy compliance requirements.

### **Compliance with RF Exposure Standards**

Your DMR Digital Portable Radio is designed and tested to compliance with a number of national and international standards and guidelines for human exposure to radio frequency electromagnetic energy. This radio compliance with the IEEE (FCC) and ICNIRP exposure limits for occupational/controlled RF exposure environments at operating duty factors of up to 50% talk – 50% listen and is approved for occupational use only. In terms of measuring RF energy for compliance with these exposure guidelines, your radio generates measureable RF energy only while it is transmitting (during talking), not when it is receiving (listening) or in standby mode. Your DMR Digital Portable Radio complies with the following RF energy exposure standards and guidelines:

- United States Federal Communications Commission (FCC), Code of Federal Regulations;
- Institute of Electrical and Electronic Engineers (IEEE) C95.1
- International Commission on Non-ionizing Radiation Protection (ICNIRP)

### **RF Exposure Compliance and Control Guidelines and Operating Instructions for Two-Way Radio Operations**

To control your exposure and ensure compliance with the occupational/controlled environment exposure limits, always adhere to the following procedures;

- DO NOT remove the RF Exposure Label from the device
- User awareness instructions should accompany device when transferred to other users.

### **Operational Instructions and Training Guidelines**

To ensure optimal performance and compliance with the occupational/controlled environment RF energy exposure limits in the above standards and guidelines, users should transmit no more than 50% of the time and always adhere to the following procedures;

- In front of the face, hold the radio in a vertical position with microphone (and other parts of the radio including the antenna) at least one inch (2.5 centimeters) away from the nose or lips.

Keep the radio at a proper distance is important to ensure compliance.

Note: RF exposure decrease with increasing distance from the antenna.

- Body Worn Operation; When worn the body, always place the radio in an approved clip, holder, or body harness for this product.

Using approved body-worn accessories is important because the use of non-approved accessories may results in exposure levels, which exceed the occupational/controlled

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environment RF exposure limits

Using only approved supplied or replacement antennas, batteries, and audio accessories, use of non-approved antennas, batteries, and wired or wireless accessories may exceed the applicable RF exposure guidelines (IEEE, ICNIRP or FCC).