

# ADESSO



## WT-446D

**Professional  
PMR446 Transceiver**

*License Free Business Radio*

## INSTRUCTION MANUAL

\* Please carefully read before use

### **To Customer**

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Thank you for purchasing our handheld DMR digital transceiver. Using advanced technology, we have designed a portable radio with a stable performance, feature packed yet easy to operate. We take pride to ensure you that you will be satisfied with our quality and functional two way radio.

### **INSTRUCTIONS BEFORE USE CONTENTS**

1. Do not use transceiver with damaged antenna, it may cause serious burns with skin contact.
2. Do not use transceiver or charge the battery in an explosive environment, where there are gas, explosive caps, etc.
3. Turn off the transceiver in gas stations.
4. Do not modify the transceiver, it has been optimally and safely designed.
5. Do not leave the transceiver in direct sunlight or any other heat source for a prolonged period.
6. Do not expose the transceiver to dust, moisture, direct water and uneven surfaces.
7. Refer only to qualified technicians for repair works.
8. If there are signs of extreme heat, smoke or scent of burning from the transceiver, immediately remove battery from the radio and refer to your supplier.

### **SAFETY**

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It is very important for the user to be aware of all precautions when operating the transceiver.

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## MAIN FEATURES

### ■ General Functions

- DMR+Analog dual mode
- VOX
- Private Call, Group Call And Single call
- Emergency Mode
- Programmable Side Key
- Battery Capacity Indicator
- Hi/Low Power Selection
- Chinese/English Language Selection
- Channel/Priority Channel Scanning
- 2 Channel Zones, 32 Channels
- Remote kill/stun/activate
- Wide/Narrow Bandwidth
- DTMF

### ■ Functions in Digital Mode

- Encryption Function
- Remote Monitor /Activating /Kill
- One Key Touch Function
- Single Call, Group Call, All Call
- Contact list function, savable 1000 contact
- Digital protocol ETSI TS 102, 361-1, -2, -3

## UNPACKING

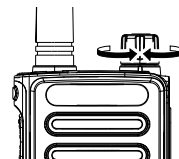
Carefully unpack the radio package and its accessories to identify them as illustrated below. If any missing or damaged parts, please contact your dealer immediately.

Items	QTY
Radio Body	1
Battery Pack	1
Charger	1
Antenna	1
Belt Clip	1
Belt Clip Screws	2
User Manual	1
Hand Strap	1

## BASIC OPERATION

### ■ Power ON/OFF/Volume

Turn the Power/Volume Knob clockwise to switch ON the radio, prompt voice will be heard. Turn the knob clockwise/counter clockwise to adjust the volume. Turning the knob fully anti-clockwise will switch off the radio.



### ■ Select a Channel

The radio has 32 channels and 2 channel zones (Each zone can set 16 channels). Each channel can set Analog mode or Digital mode. You can select the channel zones from [P1] side key, then select channel from channels switch.

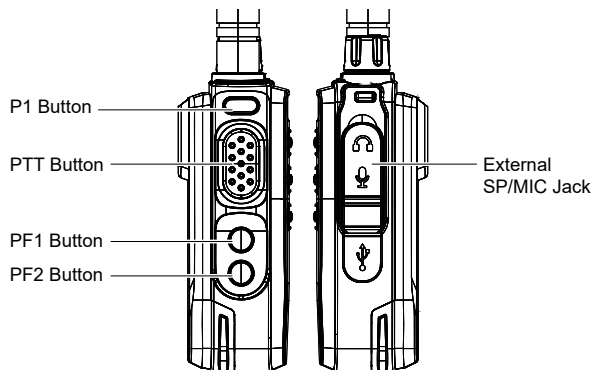
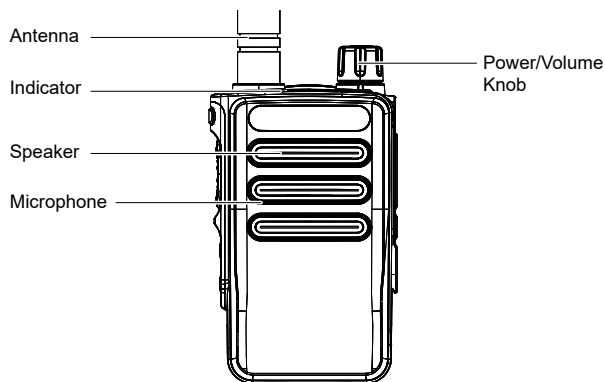
### ■ Transmit/Receive

Hold the radio away from your mouth about 2.5cm to 5cm. Keep the antenna away from your face atleast 2.5cm. Keep the PTT button pressed while talking, (during this time the indicator will be red and the trans transceiver will not be able to receive).

A green indicator indicates an incoming signal is ongoing.

## OVERVIEW

**Tip:** Familiarize yourself with the various buttons, and all indicators to maximize the features of the transceiver.



### ■ Side Button P1/PF1/PF2

These side buttons PF1/PF2/PF3 can be allocated for certain functionalities by software. The functions features that can be programmed are listed below, Customized buttons can be defined by the program software .Default setting as follow:

**P1:** short press is zone selection, long press is emergency call;

**PF1:** short press is monitor ,long press is high/low power selection;

**PF2:** short press is on touch call, long press is emergency off;

### ■ Indicator

The indicator shows operation status of your radio.

- **Red:** Radio is in transmitting signal, sending test message, sending a privacy enabled call or data.
- **Green:** Radio is Powered on or receiving signal, receiving test message, receiving a privacy - enabled call or data.
- **Blinking Blue:** Radio is in scan mode.

## FUNCTIONS OPERATION

### ■ Making and Receiving Calls

#### ◇ PTT Key

Each channel can be set as Analog or Digital mode. Press PTT to transmit, release PTT to receive.

#### ◇ Select a Zone

Zone is a channel group, the radio supports max. 2 zones. Each zone support 16 channels. Press [P1] button to zone selection.

#### ◇ Receive and Reply a Group Call

To receive a call made to a group of users, your radio must be configured as part of that group.

#### ◇ Receive and Respond to a Private Call

A Private Call is a call from an individual radio to another individual radio.

#### ◇ Receive an All Call

An All Call is a call from an individual radio to every radio on the channel. It is used to make important announcements requiring the user's full attention.

### ■ One Touch Call

After selecting your channel, you can select a subscriber alias or ID, or group alias or ID by using:

- The Channel Selector Knob
- A programmed One Touch Access button

### ■ Making an All Call

This feature allows you to transmit to all users on the channel. Your radio must be programmed to allow you to use this feature.

Making a Group or Private Call with the One Touch Access Button

The One Touch Access feature allows you to make a Group or Private Call to a predefined alias or ID easily. This feature can be assigned to a short or long programmable button press. You can ONLY have one alias or ID assigned to a One Touch Access button. Your radio can have multiple One Touch Access buttons programmed.

### ■ Talk Around

You can continue to communicate when your repeater is not operating, or when your radio is out of the repeater's range but within talking range of other radios. This is called "Talk Around".

### ■ Monitoring Features

Use the Monitor feature to continuously monitor a selected channel for activity.

### ■ Scan Lists

Scan lists are created and assigned to individual channels/groups. Your radio scans for voice activity by cycling through the channel/group sequence specified in the scan list for the current channel/group. Your radio can support up to 16 scan lists, with a maximum of 16 members in a list. Each scan list supports a mixture of both analog and digital entries. You can add, delete or prioritize channels by editing a scan list. You can attach a new scan list to your radio via Program software.

### ■ Scan

When you start a scan, your radio cycles through the programmed scan list for the current channel looking for voice activity. The indicator blinks is blue. During a dual mode scan, if you are on a digital channel, and your radio locks onto an analog channel, it automatically switches from digital mode to analog mode for the duration of the call. This is also true for the reverse.

### There are two ways of initiating scan:

- Main Channel Scan (Manual)
- Auto Scan (Automatic)

### ■ Starting and Stopping Scan

Responding to a Transmission During a Scan, your radio stops on a channel/group where activity is detected. The radio stays on that channel for a programmed time period known as “hang time”.

### ■ Emergency Operation

An Emergency Alarm is used to indicate a critical situation. You are able to initiate an Emergency at any time when there is activity on the current channel. This radio supports 3 types of alarm:

**Conventional** – Radio transmits an alarm signal and shows audio and/or visual indicators.

**Forbid** – Radio transmits an alarm signal without any audio or visual indicators. Radio receives calls without any sound through the radio's speaker, until you press the PTT button to initiate the call.

**Silent with Voice** – Radio transmits an alarm signal without any audio or visual indicators, but allow incoming calls to sound through the radio's speaker. Only ONE of the Emergency Alarms above can be assigned to the programmed Emergency button.

## SPECIFICATION

General		
Frequency Range	136-174/400-480MHz	
Channel Capacity	32	
Channel Spacing	Analog	25/12.5kHz
	Digital	12.5kHz
Working Voltage	7.4V Rated	
Frequency Stability	±1.5 ppm	
Antenna Impedance	50Ω	
Dimension (H × W × D)	98*58*35mm	
Weight About	260g (with battery, antenna, belt clip)	

Transmitter	
Power Output	4W / 0.5W
FM Modulation	11KΦF3E @ 12.5 kHz 16KΦF3E @ 25 kHz
4FSK Digital Modulation	12.5kHz Data only: 7K6ΦFXD
	12.5kHz Data & Voice: 7K6ΦFXW
Spurious Emission	-36dBm<1GHz; -30dBm>1GHz
Modulation Limiting	±2.5kHz @ 12.5 kHz
	±5.0kHz @ 25 kHz
FM Hum & Noise	40dB @ 12.5 kHz; 45dB @ 25 kHz
Adjacent Channel Power	60dB @ 12.5 kHz
	70dB @ 20/25 kHz
Audio Response	+1~-3dB
Audio Distortion	≤5%

Receiver	
Sensitivity (Analog)	0.2 $\mu$ V (12dB SINAD)
Sensitivity (Digital)	0.3 $\mu$ V / BER5%
Selectivity (TIA603 ETSI)	60dB @ 12.5kHz / 70dB @ 25kHz 60dB @ 12.5kHz / 70dB @ 25kHz
Intermodulation (TIA603 ETSI)	65dB @ 12.5/20/25 kHz
Spurious Response Rejection (TIA603 ETSI)	70dB @ 12.5/20/25 kHz
SNR	40dB @ 12.5 kHz; 45dB @ 25 kHz
Conducted Spurious Emission	-57 dBm
Audio Power Output	1W
Audio Distortion	$\leq 5\%$
Audio Response	+1~-3dB

Environmental Specifications	
Operating Temperature Range	-30°C ~ +60°C
Storage Temperature Range	-40°C ~ +85°C

Please cut along with this line

## GUARANTEE CARD

Model Number: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Date Purchased: \_\_\_\_\_

Dealer: \_\_\_\_\_ Telephone: \_\_\_\_\_

User's Name: \_\_\_\_\_ Telephone: \_\_\_\_\_

Address: \_\_\_\_\_ Post Code: \_\_\_\_\_

### REMARKS:

1. Only one Guarantee Card can be issued for each transceiver.
2. This Guarantee Card is to be filled up and detached by the dealer to remain valid.
3. Make sure the serial number written is correct and must not be altered by the customer.
4. One year guarantee covers only the transceiver, accessories such as battery, antenna and others are not included.
5. Should your transceiver needed to be serviced, refer to your dealer, an authorized service center or send to us and we will be more than happy to assist you.



The logo graphic consists of a horizontal band of blue and white halftone dots, with a solid blue band above it and a white background below it.

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