

PMRDELTA+



**DELTA+ RADIO**  
Licence-free PMR Radio

## **Main Features**

- Compact, lightweight with a rugged design
- Wide LCD display with backlight
- 38 CTCSS tones & 83 DCS codes in TX and RX
- Volume adjustment
- CALL Key with 10 tones selectable
- High/low output power selection
- Built-in LED flashlight
- Squelch elimination
- VOX for hands-free communications
- Monitor, channel scan
- Keypad lock, roger beep, battery save function
- Fast single dock chargers
- Battery life up to 25 hours
- 2 pin jack for external microphone & speaker
- Micro USB charging cables

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## **Safety Information**

Please read this information before using your radio.

### **Radio Care**

#### **Caution**

- Do not disassemble or modify the radio for any reason.
- Do not transmit while touching the antenna terminal.
- Please check and observe regulation in your country with regards to use whilst driving.

#### **End of Life Disposal**

- When the radio reaches the end of its useful life, please ensure that the unit and batteries are disposed of in an environmentally friendly way.

### **Battery Care**

#### **Precautions**

- Turn the radio OFF before charging.
- Charge the battery pack fully before first use.
- Do not recharge the battery pack if it is already fully charged as this will use one its charge cycles and may shorten its life.
- Charge the battery in accordance with the instructions enclosed with your charger.
- Do not charge the radio and/or battery packs if they are wet.

The battery pack includes potentially hazardous components.

Please:

- Do not disassemble or reconstruct battery.
- Do not short-circuit the battery.
- Do not incinerate or apply heat to the battery.
- Do not immerse the battery in water or get it wet by other means.
- Do not charge the battery near fires or under direct sunlight.
- Use only the specified charger and observe charging requirements.
- Do not pierce the battery with any object or strike it with an instrument.
- Do not use the battery pack if it is damaged in any way.

- Do not reverse-charge or reverse-connect the battery.
- Do not touch a ruptured or leaking battery.

If liquids from the battery get on your skin or into your eyes, immediately:

- Wash your eyes out with fresh water avoiding rubbing them.
- Seek medical treatment.

**Notes:**

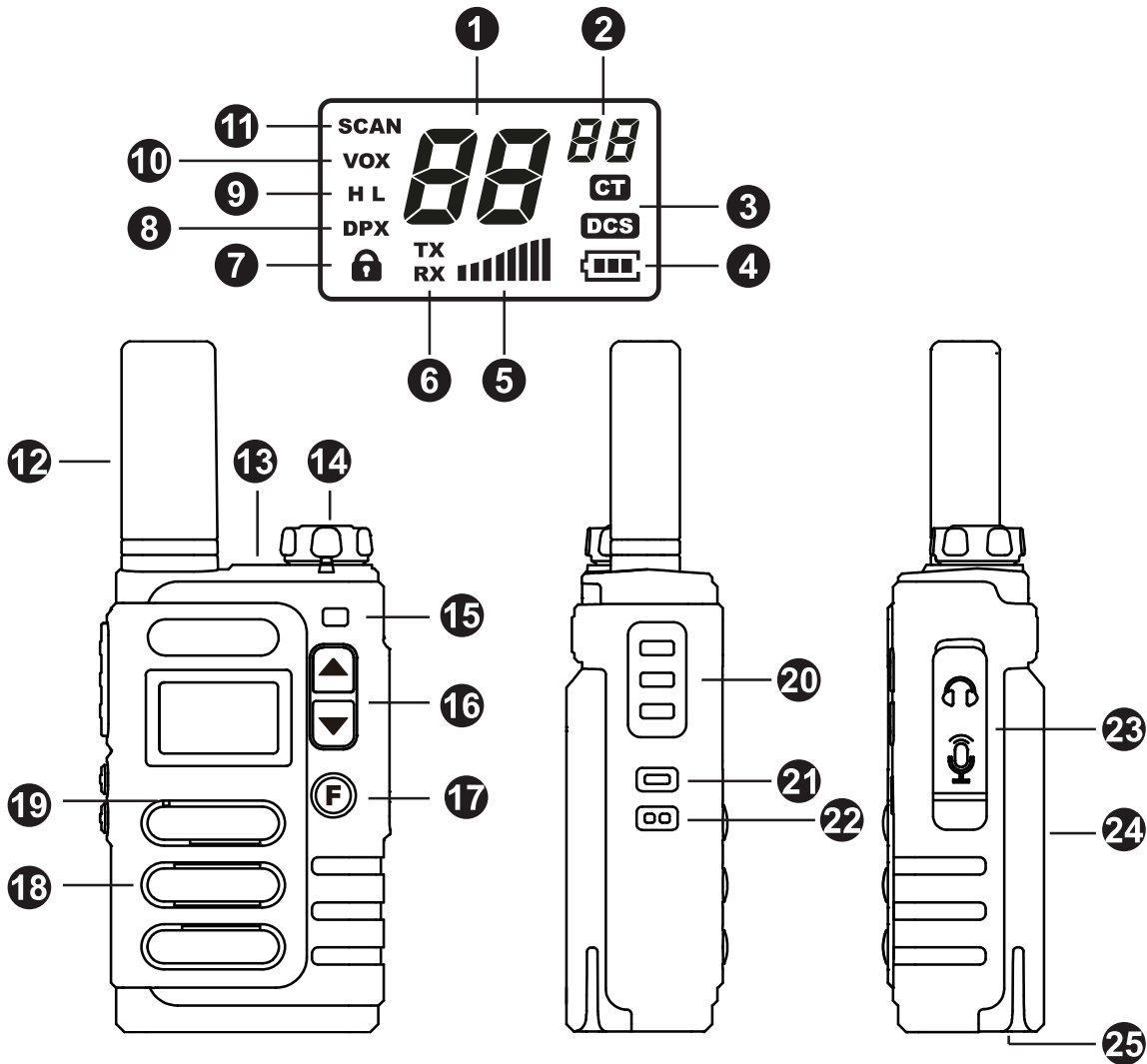
- If a battery is not to be used for an extended period of time (several months) remove the battery pack from the equipment and store in a cool and dry location part charged. Do not fully discharge the battery before storage.
- Each charge cycle reduces the battery's life. Minimize the number of times you charge your battery especially in hotter environments which further shorten a battery's life.

# Radio Overview

## Package Includes

- 2 x PMRDELTA + transceivers
- 2 x Li-ion battery packs
- 2 x USB charging cables
- 2 x Desktop chargers
- 2 x Belt clips
- 2 x Hand straps

## At a Glance



## LCD Display

1. Selected channel
2. Selected code of CTCSS or DCS (CTCSS: 1-38 / DCS: 1-83)
3. **CT/DCS**: type of sub-audio tone selected

4. Battery status indicator
5. **RSSI: TX/RX signal strength**
6. **RX**: radio in receive mode (busy channel)  
**TX**: radio in transmission (PTT pressed)
7. Keypad lock activated
8. Duplex mode
9. High / low power selection in transmission
10. **VOX** function activated
11. **SCAN** function activated

## **Radio Part**

12. **Antenna**
13. Built-in LED flashlight
14. **On/Off/Volume Knob**: turn the radio ON or OFF and to adjust the radio's volume
15. **LED Indicator**: solid red during transmission and solid green in reception
16. **▲/▼ keys**: to change the channel and settings in the menu
17. **Function / Menu Key**: short press this key to enter the radio's menu; long press it for about 3 seconds to activate the keypad lock
18. Built-in speaker
19. Built-in microphone
20. **PTT**: press and hold down this key to transmit and talk, release it to receive and listen.
21. **Up CALL / MON Key**: short press this key to send a call to the selected channel; long press it for about 2 seconds to activate Monitor function, that temporarily cuts off the squelch (for weak signals). This key can be disabled by programming software.
22. **Down Flashlight / SCAN Key**: short press this key to activate the flashlight; long press it for about 2 seconds to activate the SCAN function. This key can be disabled by programming software.
23. **Audio Accessory Jack** (2 Pin Connector) Connect compatible audio accessories, such as microphones, earpieces, etc.
24. Rechargeable Li-ion **battery pack**
25. **USB port** for the recharge of the battery pack

## Basic Operations

### Turning On/Off

To turn on the radio, turn the **ON/OFF/VOLUME** knob clockwise until you hear click, the LCD display will light up and the radio will play power up audio.

To turn off the radio, turn the knob counter-clockwise until you hear click.

### Volume Control

Turn the **VOLUME** knob to about half way and adjust it to a comfortable level as soon as you receive a signal. If you do not receive a signal you can use the up side **MON** key.

### Channel Selection

Press the **▲/▼** keys to scroll up or down the channels till you select the desired channel.

### Transmission and Reception

To transmit:

1. Make sure that no one else is currently talking on the selected channel.
2. Keep **PTT** button firmly pressed. **TX** and **RSSI** icon will appear on the display.
3. Speak normally in the direction of the microphone.
4. When you have finished, release the **PTT**. **TX** and **RSSI** icon will disappear from the display.
5. When the radio is in reception mode (**PTT** not pressed) you will automatically receive any communication.

Note: During transmission and reception, as far as possible, try to keep the antenna in vertical position and to avoid obstacles towards the direction of the other party.

### Monitor

The Monitor feature is for temporarily opening the squelch in order to listen to signals that are too weak to open the squelch. By opening the squelch you will listen the communication “chopped” by the squelch. In order to activate the Monitor function, so as to listen to all traffic on the selected channel, keep pressed the up side **CALL / MON** key for about 2



seconds. Keep pressed it again for about 2 seconds to disable this function.

### **Scanning All Channels**

The radio can automatically search for signals throughout the bands by scanning, i.e. selecting the channels in sequence.

Long press the down side **Flashlight / SCAN** key for about 2 seconds to start scanning. When a signal is detected, the scanning pauses on that channel and you can transmit by pressing **PTT**. The **▲/▼** keys allow you to change the direction of scanning (from lower channels to higher ones or vice versa) and therefore to skip communications which are of no interest.

If you want to stop it, long press the down side **Flashlight / SCAN** key for about 2 seconds again. The radio will go back to the channel from which the scanning originally started.

### **LED Flashlight**

Shortly press the down side **Flashlight / SCAN** key to turn on/off the flashlight at the top of the radio.

### **Keypad Lock**

Keep press **Function** key for about 3 seconds to activate keypad lock function and **🔒** will be displayed as confirmation. Only **PTT** key remain active. To disable this function, keep pressed again **Function** key for 3 seconds approx.

### **Battery Save**

The battery saving feature enables a reduction in the consumption of up to 50%. Battery saving comes on automatically when the radio does not receive any signal for more than 5 seconds. When the batteries are discharged, replace the batteries or recharge the battery pack.

## Menu Operations

### CTCSS Tones / DCS Codes Selection

The radio can receive in two modes:

- a. Open traffic: in this case you will hear any communication transmitted on the selected channel.
- b. Group mode with CTCSS/DCS: CTCSS tones and DCS codes are access keys that allow you to receive only messages coming from parties using the same channel and code. The speaker will remain muted until the correct tone is received.

To activate one of different 38 CTCSS tones & 83 DCS codes in RX and TX:

1. Select the desired channel.
2. Press the **Function** key once and the display shows “*OF, CT & DCS*” blinking.
3. By pushing the **▲/▼** keys the display will show *CTCSS* (*CT* blinking) or *DCS* (*dn* blinking); press **PTT** to confirm the selection.
4. Press the **PTT** key again or wait for approximately 3 seconds to exit.

### VOX Function

The radio enables hands free conversations through VOX function. You can enable it with or without accessories. The VOX sensitivity can be set in 9 different levels:

- 1 = high sensitivity (normal voice with no background noise)
- 9 = low sensitivity (loud voice with excessive background noise)

To activate VOX function:

1. Press the **Function** key till VOX will appear on the display.
2. Use the **▲/▼** keys to select the desired level.
3. Press **PTT** to confirm the selection.

To disable the VOX function, follow the instructions above and select option “*OF*”.

### CALL Function

PMRDELTA + can send 10 different call tones. To send this audio signal to other users, press the up side **CALL / MON** key.

To select the desired call tone:

1. Press the **Function** key until the display shows “CA 1”.
2. By pushing ▲/▼ keys you will hear the 10 pre-set call tones.
3. Confirm by pressing the **PTT** key.

### **Roger Beep**

When your transmission is finished (**PTT** released), the radio gives out a sound that indicates to the other party can start transmission. This function is enabled by default.

To deactivate it:

1. Press the **Function** key until the display shows “rb 2” blinking;
2. Using the ▲/▼ keys select “of” and “rb of” will be displayed;
3. Press **PTT** button to confirm roger beep deactivation.

### **Keypad Beep**

To deactivate the keypad beep, follow these steps:

1. Press the **Function** key until the display shows “bP on” blinking.
2. Use the ▲/▼ keys until the display shows “bP of”.
3. Confirm by pressing the **PTT** key.

## Troubleshooting

Problem	Possible Reasons and Potential Solutions
No Power	Recharge or replace the battery pack; Extreme operating temperatures may affect battery life or function.
Hearing other noises or conversation on a chosen channel	Confirm CTCSS/DCS is set; Frequency or CTCSS/DCS may be in use; Change settings: either change frequencies or CTCSS/DCS on all radios; Make sure the radio is at the right frequency and privacy code when transmitting.
Audio quality not good enough	Radio settings might not be matching up correctly. Double check frequencies, CTCSS/DCS and bandwidths to make sure they are identical in all radios.
Limited talk range	Steel and/or concrete structures, heavy foliage, buildings or vehicles decrease range. Check for clear line of sight to improve transmission; Change location of radio. UHF radios provide great coverage in industrial and commercial buildings. Increasing power provides greater signal range and increases penetration through obstructions.
Cannot transmit or receive	Make sure the <b>PTT</b> button is completely pressed when transmitting; Confirm that the radios have the same channel, frequency, private code and bandwidth settings; Recharge, replace and/or reposition batteries; Obstructions and operating indoors, or in vehicles, may interfere, change location; Verify that the radio is not in Scan.
Heavy static or interference	Radios are too close, they must be at least seven feet apart; Radios are too far apart or obstacles are interfering with transmission.

Low battery	Recharge or replace the battery pack; Extreme operating temperatures affect battery life.
Desktop Charger LED light does not blink	Check that the radio/battery is properly inserted and check the battery/charger contacts to ensure that they are clean and charging pin is inserted correctly.
Cannot activate VOX	VOX feature might be set to OFF; Accessory not working or not compatible.
Battery does not charge	Check desktop charger is properly connected and correspond to a compatible USB adapter; Check the charger's LED indicators to see if the battery has a problem.

## Specifications

### General

Frequency Range	PMR: 446MHz
Channel Capacity	99 Channels
Channel Bandwidth	12.5kHz
Operating Voltage	3.7V DC
Dimensions (H x W x D)	90 x 52 x 30mm
Weight with battery	140g

### Transmitter

RF Power(H/L)	PMR: 500mW
Frequency Stability	±1.5ppm
Spurious & Harmonics	-36dBm < 1GHz, -30dBm > 1GHz
FM Hum & Noise	≥ 36dB
Modulation Deviation	≤ 2.5kHz
Adjacent Channel Power	≥ 60dBC
Audio Frequency Response	+1 ~ -3dB
Audio Distortion	< 5%

### Receiver

Sensitivity (12 dB SINAD)	≤ 0.3μV
Adjacent Channel Selectivity	≥ 60dBC
Audio Distortion	< 5%
Radiated Spurious Emissions	< -54dBm
Intermodulation Rejection	70 dB
Audio Output	1W @ 8 ohms

### Charger & Battery

<b>Desktop Charger</b>	
Input	DC 5V=1A
Output	DC 5V=800mA
<b>Battery Pack</b>	
Battery Capacity	1700mAh
Voltage	3.7V

## Warranty Information

### Warranty Period

Radio Body: 12 months from date of purchase.

Battery Pack: 12 months from date of purchase.

**Note:** Please retain your receipt as your proof of purchase will be required to valid warranty claim.

### Warranty Exclusions

This warranty will not apply in relation to:

- Failure to provide a proof of purchase
- Product has been modified, changed or serial number has been removed
- If any damage is caused by the use of non approved accessories
- Product that has been repaired by an unauthorized person
- Product failure due to customer misuse, abuse or abnormal use
- Failure by the customer to take reasonable care
- Failure due to not using the product in accordance with instructions stated in the manufacturer user guide.
- Product failure due to recommended installation procedures not being followed as stated in the manufacture's user guide.



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[www.pama.co.uk](http://www.pama.co.uk)

Helpline: +44 (0) 161 494 4200