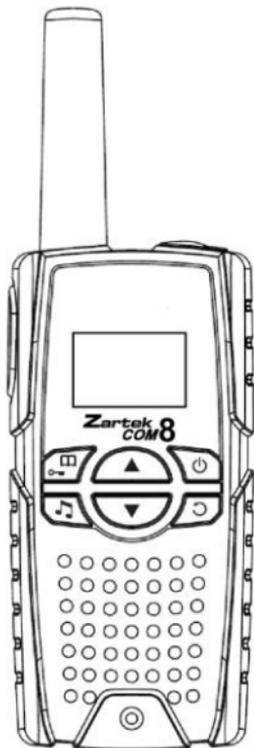


Zartek

COM8

USERS MANUAL



INTRODUCTION

Congratulations! You have just purchased a new remarkable product in communications. The **Zartek COM8** is one of the smallest and lightest two-way radios in the world. With this radio you can talk instantly to as large a group as required and as often as you like without airtime charges, giving you, family, friends, commercial and industrial colleagues many years of free quality communications. The **Zartek COM8** uses a Lithium Polymer battery (Li-Po), the most advanced and ecologically friendly rechargeable battery available.

Legislation allows you now to own and use this relatively powerful equipment without an operator's annual license from ICASA. This applies in most European countries as well as in all SADC (Southern African Development Community) countries.

To obtain maximum performance from your personal two-way radio, please take a few minutes to carefully read this user's manual. The **Zartek COM8** is a lightweight, palm-sized wonder communication device, so small you can carry anywhere and talk to any person who is set on the same channel, as long as they are within range. The range of the **Zartek COM8** is anything from 500m indoors to 15kms outdoors, depending on terrain and environment. The signal will bounce around and penetrate materials at the speed of light, bearing in mind the greater the barriers the more attenuation i.e. weakening of the signal.

The **Zartek COM8** is our exciting new generation series and uses the 446MHz band of frequencies often called the PMR (Public Mobile Radio) band. It is pre-programmed with 8 frequencies and is therefore channel compatible to the **Zartek Pro8**, ZA748 and ZA725.

For further information contact us via email: info@zartek.co.za or visit our website www.zartek.co.za/

WARNING & PRECAUTIONS

- Read this manual before using the radio.
- Avoid prolonged direct exposure to sunlight and heat.
- Do not use adaptors and/or batteries different from those specified in the instructions manual. Only use approved adaptors and batteries.
- Do not operate the radio in hazardous environments, explosion or fire may result.
- Do not operate the radio near unshielded electrical blasting caps. Under certain conditions, radio can interfere with blasting operations and may cause an explosion. Turn your radio OFF to prevent accidental transmission when in a “blasting area” or in areas posted “Turn your radio off”. Construction crews often use remote controlled RF devices to set off explosives
- Do not operate the radio in high humidity, dusty or very wet environment. If the device gets wet, immediately remove the battery and leave to dry fully for a few days. Water damage is usually irreparable.
- Do not attempt to modify the radio. The radio is designed to comply with CE and R&TTE.
- The LCD display is made of glass and maybe damaged if dropped or impacted.
- Before storing, fully recharge the batteries and remove from units.

WARRANTY

This product is warranted by Zartek against manufacturing defects in materials and workmanship under normal use for a 12 month period from date of purchase via our authorized appointed dealers.

CARE & SAFETY

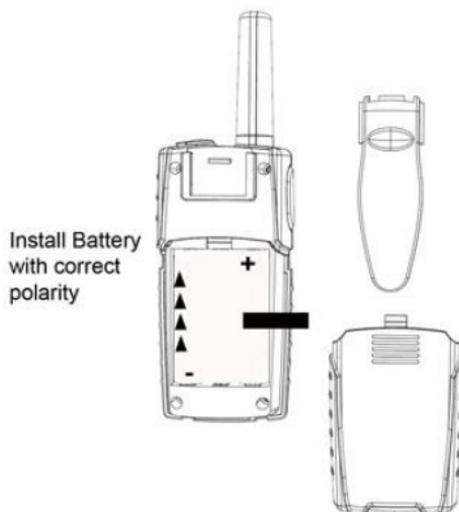
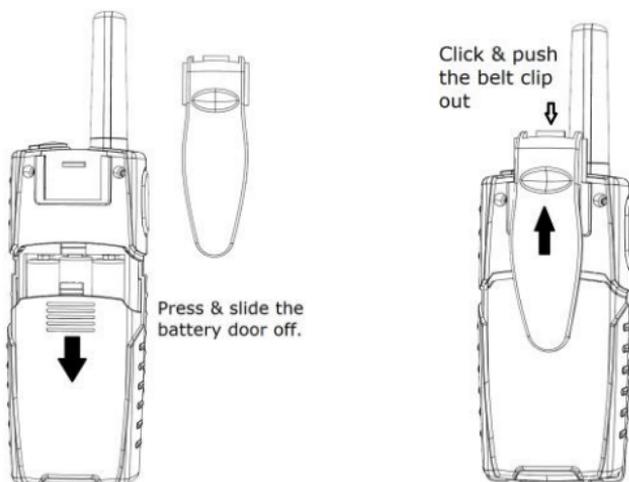
To clean the radio, wipe with a soft cloth dampened with water. Never use solvents or cleaners on the radio, they can harm the body and leak inside, causing permanent damage. Your radio is not splash proof or waterproof. If the radio gets wet, turn it OFF and remove battery immediately. Dry the battery compartment to minimize potential water damage. Leave cover off battery compartment and do not use until completely dry.

MAIN FEATURES

- PLL (Phase Lock Loop) Controlled Circuitry
- Ultra Slim size (22mm)
- Ultra light weight
- Li-Po rechargeable battery
- 8 UHF (Ultra High Frequencies) Frequencies
- 38 Quiet (CTCSS-Continuous Tone Coded Sub-audible Squelch) Codes
- 83 Quiet (DCS - Digital Code Squelch) Codes
- 968 channels (COM 8)
- Digital Volume Control (5 levels)
- Channel Scanning
- VOX (Voice Operated Transmit) Function (3 levels of sensitivity)
- Dual Watch (Monitor 2 Channels)
- Roger Beep On/Off
- Call Function (10 different tones)
- Auto Squelch Control
- Back lighted LCD (Liquid Crystal Display)
- Keypad Lock
- Memory Retention Function
- Auto Power Off (APO)
- Power Saving Circuitry
- Battery Charge/Drain Indication
- External Mic/Headset (PTT or VOX) socket
- Transmit indicator icon and light

INSTALLING BATTERIES

Use the Li-Po rechargeable battery provided.



WARNING

- Make sure the polarity of battery is correct.
- When the battery is damaged or not working, dispose of it safely. Never discard them or place them close to heat, otherwise, they may explode.

This radio is designed to use a 3.7v Li-Po rechargeable battery. The battery included is well designed to function with this equipment and has built-in protection circuitry for internal short circuit and overcharge.

Check the included items list on the outer packaging to see what chargers are included as charger types may differ per pack.

RECHARGING BATTERIES

A fully charged battery will give **24 hours** of average use on duty cycle 5% transmit, 5% receive, 90% standby. Operating time is reduced with more activity. When the “Battery Level” icon is low, you need to charge the battery with the enclosed AC/DC, Vehicle (optional) or USB adaptor (optional) or Desktop Charger (optional). The battery has a built-in charging current limiting circuit and when the battery is fully charged, the circuit will automatically cut the charge current to protect the battery.

- The charging cycle rate is about 750 times. Li-Po batteries do have a shelf life and should be stored with charge and in a cool environment to extend their life. Storing a flat battery for more than a few months will damage the battery and will need to be replaced.

Charging direct with AC/DC Adaptor, vehicle cigarette lighter Adaptor or USB cable:

- Plug the adaptor into the wall or vehicle cigarette lighter socket and the other end into the earphone jack **on the top of** the radio.

- Connect the USB cable into a USB port on a computer, laptop or AC/DC charger and the other end into the radio. (Charging time with the USB cable is longer)
- The unit will automatically **turn off** and the LCD will display the battery level being filled to indicate charging. To charge fully from empty requires about 4 hours.
- When fully charged the LCD will display a full battery .
- Unplug the adapter from the socket and turn the radio on.

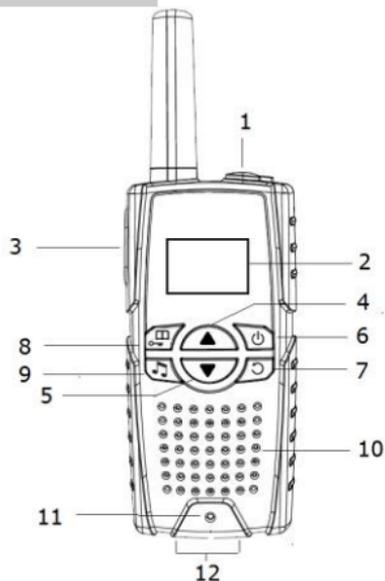
Charging using Dual Desk Top Charger with AC/DC, vehicle adaptor (not with the USB charging cable) (only included in Superpack)

- Connect the pin into the back of the desk-top charger cradle.
- Place the radio into the desk-top charger. One or two radios can be charged at the same time.
- While charging, the **RED** LED on the charger will be ON.
- Unlike the direct adaptor, the radio remains ON and does not turn automatically OFF. Messages can be **received** but **not transmitted** if the radio is sitting in the charger. To transmit, the radio will have to be removed from charger.
- A full charge requires about **4 hours**. The **RED** LED of the charger will turn to **GREEN** indicating fully charged.
- Make sure that the two charging contacts under the radio are clean. Scratch with a small sharp tool if better contact is needed.

⚠ WARNING:

- Do not insert the wrong way into the cradle. Front of radio must face LED indicator lights.
- To avoid damage to the radio use only original accessories.
- Only use vehicle cigarette lighter adaptor with standard 13.6vDC socket.
- The unit will warm up slightly during charging.
- If the battery is totally flat, the charging icon may take a few minutes to show.

OVERVIEW



1. Earphone & Charger Jack
2. LCD display
3. PTT key
4. Up key
5. Down key
6. Power On/Off key
7. Scan key
8. Menu / Key lock key
9. Call Tone key
10. Speaker
11. Microphone
12. Desktop Charger Contacts

LCD DISPLAY ICONS



1. VOX
2. Dual Watch
3. RX
4. TX
5. Main Channel Number
6. Speaker Volume
7. Key Lock
8. APO (Auto Power Off)
9. Battery Level
10. DCS
11. Code for CTCSS/DCS
12. CTCSS
13. Scan
14. Call tone

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(1) POWER ON/OFF

- To power ON the radio, press Power On/Off key "  " for 2 seconds until a beep is heard and the LCD screen displays the channel and battery level icon 
- To power OFF the radio, press Power On/Off key "  " for 2 seconds until LCD display turns off.

(2) MAKING COMMUNICATIONS

The radio has 8 main frequencies (large numbers) & 38 CTCSS codes & 83 DCS (small numbers) effectively giving you 968 channels respectively. You can communicate with any other user who is using the same combination, providing they are within range.

(3) SPEAK TO ANOTHER RADIO

- Press & hold the PTT key, the RED LCD backlight turns on and shows the icon  indicating the radio is transmitting.
- Hold the radio in a vertical position with the microphone **(hole near the bottom of radio)** 3-5 cm from your mouth and then speak.
- When you finish speaking, release the PTT key.

(4) LISTEN TO ANOTHER RADIO

- The radio will automatically sound received transmissions from the same channel .
- When you press the PTT key, you can't listen to other radios. Make sure you do not press the PTT key for listening.
- Adjust volume control if necessary.

(5) ADJUSTING SPEAKER VOLUME (5 LEVELS)

- Press the "" key to increase the volume.
- Press the "" key to decrease the volume.

(6) TALK TIME-OUT FUNCTION

- Time-out function can avoid transmitting by chance and prolong the battery life.

- The radio will stop transmitting and sound a warning tone when PTT is held over 60 seconds. You then need to release PTT and press again for further transmission.
- In VOX mode, the unit will stop transmitting and sound a warning tone after continuous talk for 60 seconds. You can re-activate VOX after the time-out. (Please refer to VOX function for detailed VOX operation)

(7) TALK RANGE

The range will depend on the type of terrain that you are communicating across.

The **Zartek COM8** uses the UHF (Ultra High Frequency) band and will be subject to similar obstacle interference as cellular phones. The radio works indoors as well as outdoors. Typical rough estimate ranges for different terrains are:

- Shopping centre 300m-1000m
- Building 5-30 stories,
- City centre & dense bush 500m-2km,
- Residential & over water 2-4km,
- Farmland 3-5km,
- Top of mountain or building (elevated line-of-sight) 10-30km.

When you press the PTT talk button a signal is transmitted and the signal floods the area in all sideway directions. The signal travels in 3 different ways:

1) **Penetration**: The signal can go through materials such as wood, plastic, cement and fabric. The denser the material or more built up the environment the weaker the signal will become. The signal cannot go through solid metal or very large solid land structures such as a hill or mountain. Metal acts like a shield and that is why the performance from the inside of a vehicle (car or 4x4) will be less than outside.

2) **Reflection**: The signal cannot go through metal or very large structures such as a hill or mountain, but it can bounce off (like a mirror), go around and reflect in other directions as well. This happens at the speed of light.

3)Line-of-sight: Line-of-sight is when there are no obstructions in the path between the communicating parties. The higher up you go the further you can see, so the larger the line-of-sight distances will be. Generally you can talk to wherever you can see, which is why the coverage in a valley is much less than the coverage from on top of a hill.

Ensure that there is nothing blocking the antenna .The less metal in close proximity (0-2m) the better the range. There may be external interference from electrical equipment (power lines or factories) or natural causes (moisture in the air or storms) that may vary depending on the location and the weather.

(8) MENU FLOW CHART

Press Menu key **[M]** once to enter main channel selection, press **[M]** again for next function selection etc.

Main Screen → Main Channel → CTCSS → DCS → Dual Watch → VOX → Call Tone → Beep Tone → Roger Beep → Auto Power Off → Main Screen

(9) SELECT CHANNEL

To select the main channel

- Press the **[M]** key once, Main channel number displayed will flash.
- Press **▲** or **▼** key to select your desired main channel number.
- Press the PTT key to confirm and quit or press **[M]** to continue next function setting.
- You have 12 seconds to decide before auto-reverting back to the main screen.

(10) CTCSS / DCS CODE FUNCTION (see table below)

This function increases privacy and allows you to select your group (38 CTCSS codes / or 83 DCS codes) of users on the same channel. Only the users with the same CTCSS/DCS code can listen and talk to each other.

Please note that selecting a CTCSS/DCS code does not assure total privacy. CTCSS codes are more common than DCS codes. In radio communication, any PMR 446 radio **can listen** to all communications on the same channel when using the default

standard setting with CTCSS/DCS = 0 (OFF).

To select a CTCSS code

- Press the "☐" key twice, the CTCSS code display will flash.
- Press "▲" or "▼" key to select your required CTCSS code (1~38, "0" is off).
- Press the "PTT" key to confirm or press "☐" to continue.
- You have 12 seconds to decide before auto-reverting back to the main screen.

To select a **DCS Code**

Each channel also has 83 digital codes to let you set up group of users for more secured private communication.

- Press the ☐ key 3 times, DCS code display will flash.
- Press ▲ or ▼ key to select your desired DCS code from 1 to 83, 0 is OFF.
- Press the PTT key to confirm and quit.

⚠ IMPORTANT

The unit will use the last codes either CTCSS or DCS being selected and confirmed.

(11) **DUAL WATCH**

The unit has dual watch function. You can monitor two channels, the current (as set using menu buttons above) and another (dual watch) channel. If the unit detects a signal on either channel, it will stop and receive the signal. After the signal stops, it will continue to monitor both channels again.

- Press the ☐ key 4 times, LCD display **DW** icon.
- Press ▲ or ▼ key to select the dual watch channel (1-8, except the current channel), LCD display **OF** is OFF.
- After turning on the function, LCD will display **DW** icon

Press the PTT key to confirm and quit or press ☐ to continue next function setting.

(12) **VOX "HANDS FREE WALK & TALK"**

The **Zartek COM8** has innovative state-of-the-art technology not seen in other two-way radios with its multi-level sensitivity built-in VOX function. You can enjoy talking and listening

without pressing PTT key as transmit is automatically activated by sound. This turns your radio into hands free “walk & talk” with your included earphone. Setting 3 is the most sensitive to noise.

- To turn on VOX function press " " key 5 times, the LCD displays the VOX icon and the sensitivity digit display will flash.
- Press " " or " " key to select **OF**, 1, 2 or 3(OFF, low, medium & high sensitivity).
- After turning on VOX the LCD will display VOX icon. Press PTT to confirm and quit or press " " key once to confirm and continue to the next menu feature.
- You can plug in the earphone for hands-free talking & listening.
- The VOX feature works best when speaking directly into (or close to) the microphone on the radio or on the external headset.

(13) **SENDING CALL-TONES**

You can use 1 of 10 different “Call Tones” to get attention of other user on the same channel.

- Press the  key and the tone will sound, LCD will display the transmit icon  and  icon and your call tone will be sent.

(14) **SELECTING A CALL-TONE (10 AVAILABLE)**

- Press the  key 6 times, LCD display  icon and call tone number will flash.
- Press  or  key to select your desired call tone.
- Press the PTT key to confirm and quit or press  to continue next function setting.

(15) **KEY TONE (ON/OFF)**

Setting the key tone ON will sound a beep when a setting button is pressed (not PTT).

- Press  key 7 times, LCD display “to”.
- Press  or  key to turn on (LCD display ON icon) or turn off (LCD display OF icon).
- Press PTT to confirm

(16) ROGER BEEP (ON/OFF)

The Roger beep notifies the receiving radio that the conversation has ended by sounding a beep when the transmitter has finished.

- To activate the roger beep press the " key 8 times and the LCD will display "ro".
- Press the " or " key to turn on ("ON" icon) or turn off ("OF" icon) the Roger beep.
- Press PTT to confirm and exit to the main screen or press the " key once to confirm the selection and continue to the next menu feature.

(17) AUTO POWER OFF (APO)

- Press the " key 9 times the LCD displays the "APO" icon.
- Press " or " key to select auto power off time from 0 to 6 hours.
- Press PTT button to confirm and return to the main screen or press the " key once to confirm the selection.
- After turning on this function the LCD will display the "APO" icon and automatically turn off at designated time.

(18) SCANNING CHANNELS

- Press " key once and the " icon will appear and radio will start scanning through the 8 channels automatically. Only the codes set on each channel will be scanned.
Note: Pressing the button for over 2 seconds, will break the squelch noise and open (un-squelch) the frequency.
- The radio scans all the channels one by one and will lock on any activity. After locking-on to a conversation, press the " or " key to continue scanning or press the PTT key to store the channel and communicate back.
- If there is no activity, it will continue to scan.
- By pressing the PTT key, it will stay on the current selected channel and quit the scanning function.

(19) KEYPAD LOCK

- Press and hold the " " key for 1.5 seconds, the keypad lock " " icon will appear.
- This will lock all keys, except the PTT key.
- To unlock, press " " key again for 1.5 seconds.

(20) USING PTT/VOX EARPHONE (only included in Superpack)

A single headset can be used with both PTT and VOX capabilities.

- Plug the PTT/VOX Earphone into the earphone jack at the top of radio.
- Press & hold the PTT key on the in-line microphone to speak and talk directly (close) into the microphone (hole).
- Release the PTT key to listen.
- Adjust volume control if necessary.
- Set up VOX on the radio using the menu " " key (see section 12 above).
- Speak into the in-line microphone to activate the transmitter and listen through the earpiece.

(21) SPECIFICATIONS

Operating Frequency Range	446.00625 ~ 446.09375 MHz
Number of Frequencies	8 (12.5KHz channel spacing)
Modulation	FM
Frequency Control	PLL
RF Output Power	500mW e.r.p
Power Supply	3.7v 720mAh Li-Po rechargeable battery
Antenna Impedance	50 Ohm
Operating Temperature	-10 to +55C

(22) ACCESSORIES

- GE-244-F.....Ear-bone mic. With finger PTT(high noise/wind)
GE-219Boom mic. with in-line PTT
GE-246PTT (and VOX) Earphone with in-line microphone
GE-247.....Li-Po Rechargeable Battery 3.7V
GE-248.....Dual Desktop Charging Cradle
LM-503.....Mains adaptor (1 Lead)
LM-505.....Vehicle adaptor
LM-507.....Mains adaptor (2 Leads)

CTCSS standard tones 1 -38			
Code #	(Hz)	Code #	(Hz)
1	67.0	20	131.8
2	71.9	21	136.5
3	74.4	22	141.3
4	77.0	23	146.2
5	79.7	24	151.4
6	82.5	25	156.7
7	85.4	26	162.2
8	88.5	27	167.9
9	91.5	28	173.8
10	94.8	29	179.9
11	97.4	30	186.2
12	100.0	31	192.8
15	103.5	32	203.5
14	107.2	33	210.7
15	110.9	34	218.1
16	114.8	35	225.7
17	118.8	36	233.6
18	123.0	37	241.8
19	127.3	38	250.3

DCS Code Table

Code #	Code						
1	23	26	162	51	411	76	703
2	25	27	165	52	412	77	712
3	26	28	172	53	413	78	723
4	31	29	174	54	423	79	731
5	32	30	205	55	431	80	732
6	43	31	223	56	432	81	734
7	47	32	226	57	445	82	743
8	51	33	243	58	464	83	754
9	54	34	244	59	465		
10	65	35	245	60	466		
11	71	36	251	61	503		
12	72	37	261	62	506		
13	73	38	263	63	516		
14	74	39	265	64	523		
15	114	40	271	65	546		
16	115	41	306	66	565		
17	116	42	311	67	606		
18	125	43	315	68	612		
19	131	44	331	69	624		
20	132	45	343	70	627		
21	134	46	346	71	631		
22	143	47	351	72	632		
23	152	48	364	73	654		
24	155	49	365	74	662		
25	156	50	371	75	664		

AUTHORISED DEALER