
Zartek
Zartek
ZA-708 PMR UHF FM TRANSCEIVER

Thank you for purchasing the Zartek ZA-708 UHF FM transceiver. High strength materials and quality components have been used in the manufacture of this two-way radio to give many years of product use. It is designed for rugged outdoor and industrial use to excel in tough environments. An optional external magnetic mount antenna kit (GE-260) is available to extend range. This can be for vehicle or fixed use. Li-ion battery technology and advanced transmitter MOSFET circuit design are included amongst many features that enhance performance, yet keep the transceiver compact and easy to operate.

NOTICE!

This transceiver has been factory programmed and can be used immediately once purchased. All 16 channels have been activated with channels in the PMR 446MHz band as per the table. Select the same channel on any ZA-708 radio to communicate. If you require communications with other radios using the same 446MHz band, such as the Zartek Pro8, you can change the channels to correspond with the ZA-708. Both the frequency (1-8) and CTCSS tones (1-38) must be the same on all radios. Should there be interference on a specific channel, select a different channel.

CH	Freq	Tone
1	1	10
2	2	10
3	3	10
4	4	10
5	5	10
6	6	10
7	7	10
8	8	10
9	1	20
10	2	20
11	3	20
12	4	20
13	5	20
14	6	20
15	7	20
16	8	20

Table of programmed channels

PROGRAMMING NOTICE!

An optional programming kit (part number GE-261) is available to program different PMR 446MHz channels on the ZA-708. The programming kit for the ZA-708 consists of software and a cable to connect the radio to the serial port on a PC. Other more exclusive settings such as TOT (time-out-timer), Squelch level and scan can also be programmed. This transceiver can only be programmed on the 446MHz licence-free band and the power is restricted to 500mW.

Please refer to the sections in this manual for instructions on programming.

Precautions:

- Study this manual carefully to understand your transceiver well.
- For safety reasons, it is important that the user is aware of and understands the potential hazards common to using any transceiver.
- Do not operate the transceiver or replace the battery in an explosive environment (dust, gas, fumes etc).
- Switch the transceiver off whilst filling gas or when parked at a petrol station.
- Do not open or modify the transceiver in any way. Refer to a qualified technician for any service or repairs.
- Do not expose the transceiver to long periods of direct sunlight, extreme hot environments or surfaces.
- Do not place the transceiver in excessively dusty, humid, wet and/or unstable areas.

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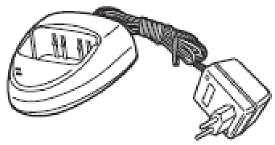
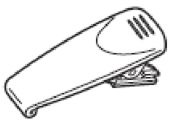
STANDARD ACCESSORIES

Carefully unpack the transceiver. We recommend that you identify the items listed in the following before discarding the packing material. If any items are missing or have been damaged during shipment, contact the supplier immediately. For optional accessories, please visit our website www.zartek.co.za

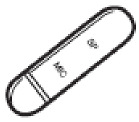
Antenna (1pc)



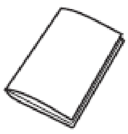
Charger & Adaptor (1 set)



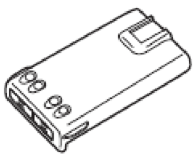
Belt Clip (1pc)



Microphone & Speaker Jack Cover (1pc)



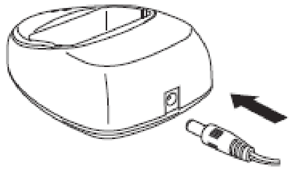
User's Manual (1pc)



Battery Pack (1pc)

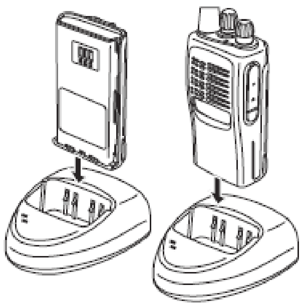
CONNECTING THE CHARGER

Before charging, plug the AC adaptor cable into the adaptor jack located on the rear of the charger. Only use the supplied AC charger.



CHARGING THE BATTERY PACK

1.Put the adaptor's cable to AC power's socket to connect power,the red light will flash.
2.Put the Li-ion battery pack in charger, the red light of charger will remain bright indicating charging.
3.The red light will change to green when the battery is fully charged.
4.Spare battery packs can be recharged separately without being attached to the radio.



Li-ion battery technology is used on this transceiver to enhance operating performance. Li-ion is lightweight and small in size and has large battery capacity. There is no memory effect. When the radio is switched off, the charge is held for a few months as the current drain is very low. Li-ion is also ecologically friendly as no heavy metals or toxic chemicals are used.

WARNING FOR BATTERY PACK

The battery pack is not charged at the factory; please charge it before using.

When charging the battery after purchasing or storing the radio for more than 2 months, the capacity will not reach its normal capacity. Only after 2-3 charge/discharge cycles will the battery capacity return to normal.

CAUTION

- Do not recharge the battery pack if it is already fully charged. Doing so may cause the life of the battery pack to shorten or the battery pack maybe damaged.
- After recharging the battery pack, disconnect it from the charger. Charging the battery pack for more than 5 days may reduce the battery pack life due to overcharging.

Note:

- The ambient temperature should be between 41 and 104°F (5-40°C)while charging is in progress. Charging outside this range may not fully charge the battery.
- Always switch off the transceiver before charging to avoid interference with the charging.
- The battery pack life is over when it's operating time decreases even though it is fully and correctly charged. Replace the battery pack.

PREPARATION

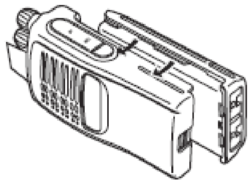
Install/Remove the Battery Pack

The average life of the supplied Li-ion battery pack is 16 hours. Average times are calculated using 5% transmit time, 5% receive time and 90% standby time.

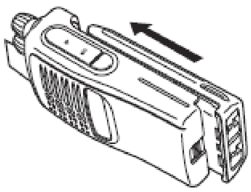
CAUTION

- Do not short the battery terminals or dispose of the battery by fire.
- Never attempt to remove the casing from the battery pack.

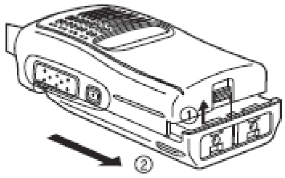
Match the four grooves of the battery pack with the corresponding guides on the back of the transceiver.



Slide the battery pack along the back of the transceiver until the release latch on the base of the transceiver locks.

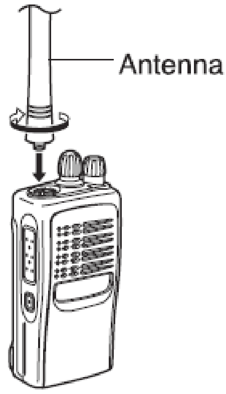


To remove the battery pack, pull back on the release latch and slide the pack away from the transceiver.



Install the Antenna

Screw the antenna into the connector on the top of the transceiver by holding the antenna at its base and turning it clockwise until secure.

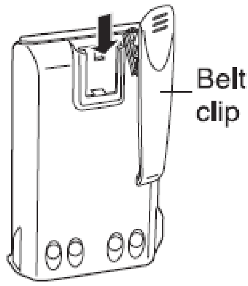


Note:

Do not excessively bend the antenna as it could become damaged
and affect the radios performance.

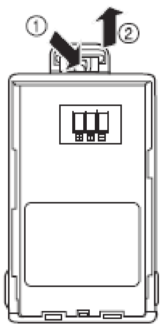
Install the Belt Clip

If necessary, you can install the belt clip on your transceiver, so you can carry the transceiver conveniently.



Note:

To install the belt clip, first remove the battery from the transceiver, place the steel plate of the belt clip against the groves on the battery and push the belt clip downwards until it is locked firmly.
To remove the belt clip, first remove the battery from the transceiver, press the steel plate of the belt clip until the belt clip released and push it upwards to take it off.



Install the Speaker/Microphone Jack Cover

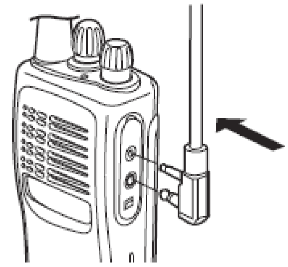
If you do not plan to use speaker / microphone, please cover it with the supplied rubber cap.

Note:

To keep the transceiver splash proof, you must cover the speaker/microphone jacks with the supplied cover.

Install the Optional Speaker/ Microphone

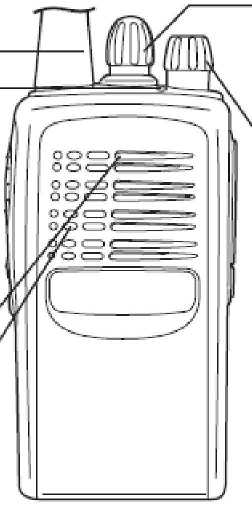
Insert the speaker/Microphone plugs into the speaker/microphone jacks.



Note:

The transceiver is not fully water resistant while using the speaker/microphone.

OVERVIEW



Antenna

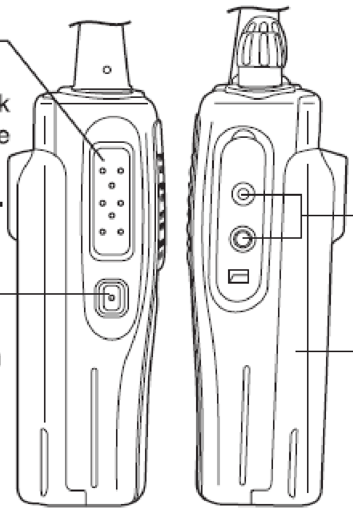
LED indicator
Red light while transmitting. Green light while receiving a signal. Flashes red light when the battery voltage is low.

Speaker

Microphone

Channel selector
Rotate to select channels 1 ~ 16.

Power switch/ Volume control
Turn clockwise to turn ON the transceiver. Turn counterclockwise until a click sounds to turn OFF the transceiver. Rotate it to adjust the volume level.



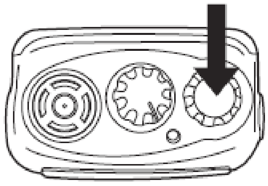
PTT (Push-To-Talk) switch
Press it, then speak into the microphone to call a station. Release to receive.

Monitor key
Press and hold on to turn the squelch OFF. You will hear background noise. Release it to turn the squelch back

Speaker/ microphone jacks

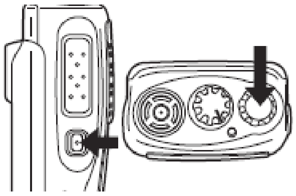
Battery pack

BASIC OPERATION

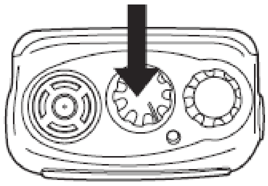


Switch ON the transceiver by turning the Power switch/Volume control clockwise.

- A beep sounds.

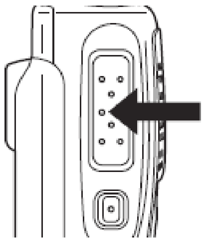


Adjust the volume by pressing and holding the monitor key, then rotate the Power switch/Volume control.



Rotate the Channel selector to select your desired channel.

- When you receive an appropriate signal, you will hear audio from the speaker.



To make a call, press and hold the PTT switch, then speak into the microphone with your normal speaking voice.

- Hold the microphone approximately 1.5 inches (3 to 4cm) from your lips.

Release the PTT switch to receive.

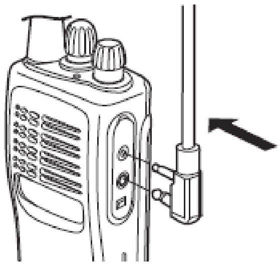
Note: When the battery pack voltage becomes too low, transmission will stop and the LED will blink red. See "Low Battery Warning" on.

PROGRAMMING (OPTIONAL)

A programming kit (part number GE-261) is needed to program different channel on the ZA-708. The programming kit for the ZA-708 consists of software and a cable to connect the radio to the serial port on a PC.

Installation:
Install the software on to a PC by inserting the CD and following the installation steps. Once installation is finished, an icon called "ZA-708" will appear on the screen. Start the program and a window will appear. Select the correct port in use.

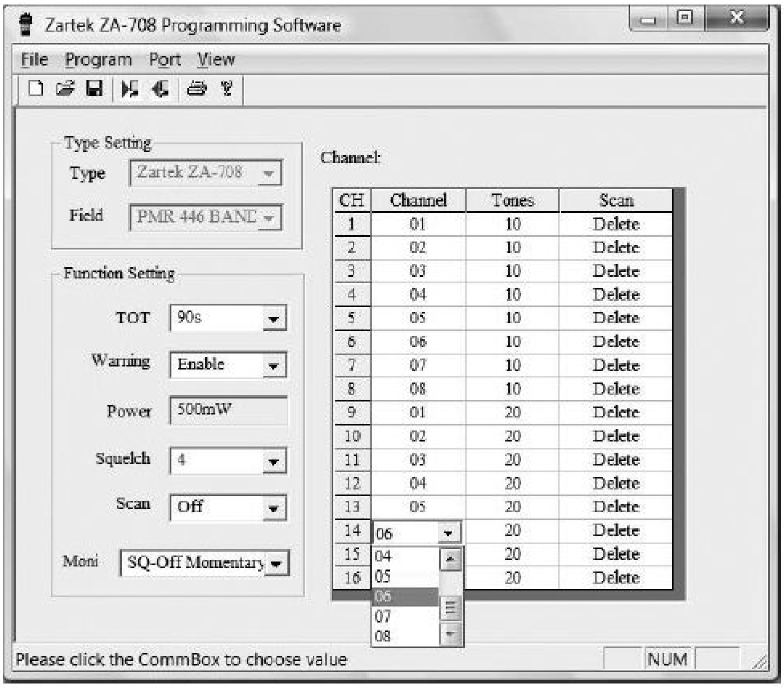
Connect cable to serial port on a PC and plug the cable into the speaker/microphone jack on the radio. Ensure that there is a charged battery connected to the radio and switch the radio on.



Reading data:
Click on the "READ" icon and press "Start" to begin reading the data from the radio. The RED LED on the radio will flash as data is being read. Once loaded, the data can be edited. This data can be saved or printed for reference. See below for instructions on each function.

Writing data:

After data is entered, click the "WRITE" icon to program the radio. Press "Start" to begin writing the data to the radio. The GREEN LED on the radio will flash as data is being written. Once finished, switch the radio off and unplug the cable from the radio. Additional radios can be programmed by plugging in the cable to the radio, switching it on and following the "WRITE" procedure.



PMR 446MHz band:

The channel column refers to the 8 frequencies that can be selected (0-8) on the radio. The 8 frequencies in the 446MHz band are represented by the 8 channel numbers in the table. These channels correspond to the channels on other 446MHz license free radios, such as the Zartek Pro8.

Ch	Freq. (MHz)
1	446.00625
2	446.01875
3	446.03125
4	446.04375
5	446.05625
6	446.06875
7	446.08125
8	446.09375

Table of Frequency band (446MHz)

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

Table of CTCSS tone frequencies

There are 47 QT (CTCSS quiet tones) and 199 DQT (digital quiet tones that can be selected. This effectively gives the user 1968 (8x47+199) channels to communicate on. These tones are used to privatise conversations and reduce interference from other users on the same frequency. There are 38 CTCSS standard tones (1-38) plus 9 extra tones and 199 digital codes. The 38 tones are common on other 446MHz radio such as the Zartek Pro8. If the tone is left "OFF", the frequency is left "open" to receive communication from any tone, but your transmitter will not be decoded by a radio with a tone.

AUXILIARY FUNCTIONS

Some of the functions below can be programmed in software.

● Time-out Timer

The purpose of the Time-out Timer is to prevent any person using a channel for a long time.

If the time that you continuously transmit exceeds the set-up time, the transceiver will stop transmitting and a tone "beep" will sound. To stop the tone, release the PTT switch. You can press the PTT switch again to resume transmitting.

Note:

- You can set up the time level: OFF, 30s, 60s, 90s ······ 300s.
- Factory programmed on TOT 90s.

● Battery Save Function

The Battery Save function decreases the amount of power used when a signal is not being received and no operations are being performed (no keys are being pressed, and no switches are being turned). While the channel is not busy and no operation is performed for 10 seconds, Battery Save turns ON. When a signal is received or an operation is performed, Battery Save turns OFF.

● Low Battery Warning

Low Battery Warning alarms you when the battery needs to be recharged. While transmitting, if the battery power goes below a predetermined value, the LED will blink red. When a tone "beep" sounds, the transceiver stops transmitting. Replace or recharge the battery pack.

Note:

- After 10 seconds you hear two sounds of "beep", the transceiver will repeat two sounds of "beep" until you charge the battery.

- Factory programmed on Warning Enable

● Monitor Function

The squelch circuit on the transceiver mutes the speaker automatically, when no signals are present. So you will not hear background noise. Press and hold the Monitor key to deactivate the squelch manually. This is useful when you want to adjust the volume level, or when you need to hear a weak signal.

The LED indicator lights green while the Monitor key is pressed.

Note:

- It is default setup from factory, user can select other items of monitor operation by PC programming.
- Factory programmed on Monitor Momentary.

● Squelch

The squelch level is used to adjust the threshold at which signals will open the audio channel. A low level will allow weaker signals to be audible, although with more background noise. However, if weak signals are annoying, the level can be adjusted higher to open the channel only when stronger signals are received.

Note: Factory programmed on Squelch Level 4.

● Tones

Some channels may have pre-programmed QT/DQT tones. A QT/DQT tone is a sub-audible tone which allows you to ignore (not hear) calls from other parties who are using the same channel. When you receive a signal that has a tone different from the one set up in your transceiver, you will not hear the signal. Likewise, signals that you transmit will only be heard by parties whose QT/DQT tone matches the tone set up in your transceiver.

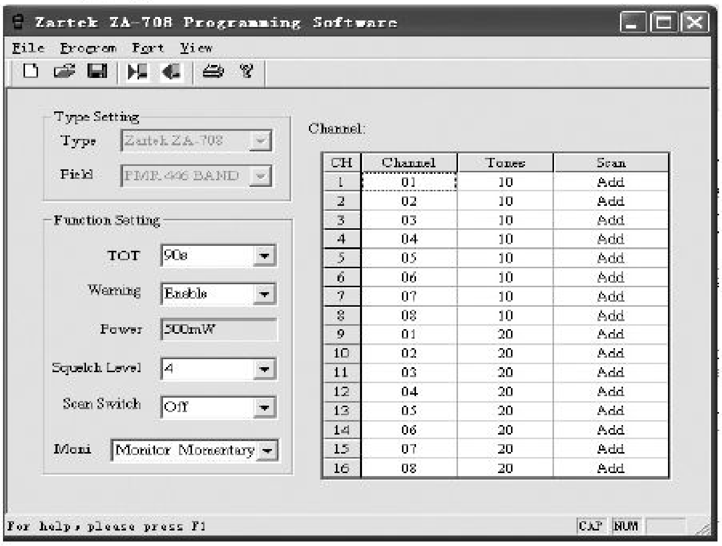
Note: Although using channels set up with QT/DQT tones relieves you from listening to unwanted calls; it does not mean your calls will be private.

● Scan

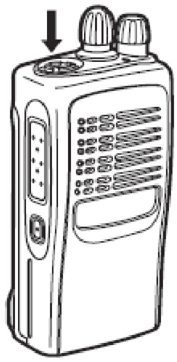
The scan function is useful when you want to find other people on similar frequencies or to monitor communication within your group. Select channel 16 and the scan will begin. If an active channel is found the scan will stop and lock on to that channel. You can now transmit and receive on this frequency. When the signal is gone for 5 seconds, scanning will resume.

Note:

- To enable scan you will have to program Ch 16 with no frequency (blank) and add the channels to be included in the scan. Only those channels added will be scanned.
- Factory programmed on Scan Switch OFF



EXTERNAL ANTENNA KIT (GE-260) (OPTIONAL)



A main feature on the ZA-708 radio is the detachable antenna. An external magnetic mount rain-proof antenna can be connected to the radio and improve radio clarity and range when using the radio in a vehicle or building. Radio signal strength is reduced by metal and concrete enclosures. When the antenna is placed outside the signal propagation and clarity improves significantly. Communication range is approximately doubled when using the car external antenna. Also note that, the higher the antenna is placed, the further the range.

Instructions:

- Screw rubber antenna into magnetic mount connector.
- Place magnetic mount antenna on the roof of vehicle.
- Lead cable through open door into the vehicle.
- Screw cable into antenna connector on ZA-708 radio.
- Position desktop cradle and stick Velcro strip.
- Place radio inside desktop charging cradle
- Plug in vehicle adaptor to charge.
- No fixed installation or drilling required.

TROUBLESHOOTING GUIDE

Problem	Solution
No power.	● The battery pack may be dead. Recharge or replace the battery pack ● The battery pack may not be installed correctly. Remove the battery pack and install it again.
Battery power dies shortly after charging.	● The battery pack life is finished. Replace the battery pack with a new one.
Cannot talk to or hear other members in your group.	● Make sure you are using the same frequency and QT/DQT as the other members in your group. Other group members may be too far away. ● Make sure you are within range of the other transceivers.
Other voices (besides group members) are present on the channels.	● Change the QT/DQT. Be sure to change the tone on all transceivers in your group.
The transceiver continuously rings	● Channel programming is empty.

STANDARD TECHNICAL SPECIFICATION

General	
Frequency range	PMR 446MHz
Channels	16 semi-duplex channels
Frequency Step	12.5KHz
Working Voltage	7.4DC±20%
Operating Temperature Range	-25°C~+60°C
Dimension(WxHxD)	58X120X35(No include antenna)
Weight(approx.)	275g(Include battery)
Battery capacity	1200mAh Li-ion
Battery Operation Time (5:5:90 duty cycle)	16 hours
Receiver	
Sensitivity(12db SINAD)	0.16uv
Modulation Receiver Bandwidth	≥|±7KHz|/|±3.5KHz|
Adjacent Channels Selectivity	≥60dB/60dB
Intermediation	≥60dB
Spurious Response	≥60dB
Squelch Response	≥60dB
Frequency Stability	±250MHz
Audio Output Distortion	500mW
Transmitter	
Output power	500mW
Modulation Mode	F3E/F2D
Spurious Radiation	≥60dB
Adjacent Channel Power	≤-65dB/55dB
Maximum Frequency Deviation	≤±5KHz/2.5KHz
Audio Output distortion	≤5%
Frequency Stability	±250MHz