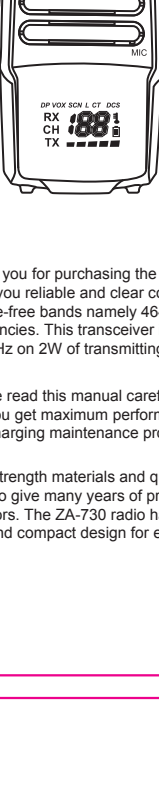


Specification

GENERAL	
Frequency Range	400-470MHz locked to 446MHz & 464MHz bands
Channel Capacity	199
Frequency Spacing	12.5kHz
Working Voltage	3.7V
Operating Temperature Range	-25°C ~ +55°C
Antenna Impedance	50Ω
Dimension and Antenna (LxWxH)	150mmx25mmx57mm
Weight (including Battery)	<400g
Battery Capacity	1000mAh
Battery Operating Time Average	20 hours on 5.5-30 duty cycle
TRANSMITTER	
Output power	500mW (2W Licensed)
Modulation Mode	FM
Maximum Frequency Deviation	± 5kHz
Antenna Radiation	<40dB
Pre-emphasis Character	Per fold frequency patch 6dB
Emission Current	<1000mA
RECEIVER	
Receiving Sensitivity	≤0.16μV (12dB SINAD)
Silent Sensitivity	≤0.3μV
Inter Modulation and Interference	50dB
Audio Power	>300mW
Receiving Current	<100mA
Silent Waiting Current	20mA

Zartek

TWO-WAY RADIO UHF HANDHELD FM TRANSCEIVER ZA-730 USERS MANUAL



- Extra Long Range
- Ultra Thin & Compact
- Built-in Display
- Li-Ion Battery
- Desktop USB Charger
- Loud Clear Audio
- 199 Channels

Thank you for purchasing the Zartek ZA-730 Portable Two Way Radio. This radio is easy to use and gives you reliable and clear communication. The ZA-730 UHF transceiver operates at 0.5W on both license-free bands namely 464 MHz consisting of 5 frequencies and 446MHz consisting of 8 frequencies. This transceiver is also approved by ICASA to operate on licensed bands from 400 – 470MHz on 2W of transmitting power.

Please read this manual carefully before using the radio. The information presented here will ensure that you get maximum performance and functionality from the radio. There are also important battery and charging maintenance procedures.

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 every day general use both indoors and outdoors. The ZA-730 radio has a unique built-in screen to display channel and functions. It also has slim and compact design for easy handling yet is still durable and easy to operate.

Warranty

There is a 12 month factory warranty on the unit. Warranty does not cover speakers, battery or accessories. The product must be used for the intended purpose and not subject to willful or accidental damage. If the product has been tampered with in any way, the warranty shall be considered null and void.

Safety Information

- 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.
- 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 immediately 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.
- Handle the radio with care and never hold the radio by the antenna. Do not drop or impact the radio as it contains sensitive electronics.
- Do not operate the transceiver or replace/charge 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.
- Please turn off the radio when you are close to a blast area or detonator area.
- Do not use any radio which has a damaged antenna. It may cause a minor burn when the damaged antenna touches your skin.
- To avoid the problems caused by EMI and EMC, turn off your radio where notices "Please turn off your radios" are posted, such as hospitals.
- Turn off your radio before boarding an aircraft. Any use of the radio must be in accordance with airline regulations or flight crew's instructions.
- When the portable radio is transmitting, hold the radio in a vertical position and speak into the microphone.
- If you carry a radio on your body, please keep the antenna away from your body by at least 2.5cm when transmitting.

PROGRAMMING NOTICE!

This transceiver has been factory programmed and can be used immediately once purchased. All 199 channels have been activated with channels in the license free bands as per the table below and on the back of the box. There are 2 bands, PMR 446MHz band with 8 frequencies (1-8) and the 464MHz band with 5 frequencies (1a-5a). Select the same channel on any ZA-730 radio to communicate.

Compatibility:

The ZA-730 is factory programmed to be directly compatible with channels 1 to 16 on the TX-8 radio. Other factory settings for radios such as ZA-748, ZA-725 and ZA-758 can be link by checking which of the 199 channels are common, for example CH 17 on the ZA-730 is frequency 2a and tone 15 which corresponds to CH13 on the ZA758. There are also many extra available channels when

Display Settings

The ZA-730 has a unique feature of a built-in display showing channels and settings. Brightness can be adjusted from 1 – 7. Time screen remains after a message is received (RX) or transmitted (TX) can be selected individually On/Off and from 3 – 60s.

Factory programmed on Brightness 5, RX 15s, TX 8s

Low Battery Alert

When the battery capacity is getting low, the radio will alert you with a beep unless the radio is recharged.

Power Selection (only in dealer license version)

Maximum communication range is achieved when the transceiver is set to high power mode, whilst low power settings will save battery life. The power can be set on low (500mW) or High (2W). Factory programmed on low 500mW

OPTIONAL ACCESSORIES

HEADSETS (use with PTT or VOX)

- GE-262 Earphone speaker with in-line PTT microphone
- GE-268 Lapel speaker microphone for vehicle & security use
- GE-266 Acoustic earbuds speaker with microphone for discreet communication
- GE-273 Heavy Duty D-Cup high volume speaker with mic. & in-line PTT
- GE-274 Heavy Duty D-cup high volume speaker with boom mic. & in-line PTT
- GE-276 Throat Microphone with lapel & finger PTT for motorbike & high windnoise

GE-204 Spare Battery (3.7V 1000mAh)

GE-254 PC Programming cable USB

GE-205 Desktop Cradle Charger

Troubleshooting

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 channel.	• Change the QT/DQT. Be sure to change the tone on all transceivers in your group.

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Linking to radio with a screen and buttons for channel changing (frequency and tone) such as the Zartek P78 and COM8

If other channels are required that are not part of the preset 199, you will need to reprogram your ZA-730 radio. Both the frequency (1-8 or 1a-5a) and CTCSS sub tones (1-38) / DCS tone must be the same on all radios for full intercommunication. Should there be interference on a specific channel, select a different channel. Note that some channels (9 – 11 & 21 – 30) are set on the open frequency without a sub tone. A sub tone is used to privatise conversations when using the same frequency.

An optional programming cable is available to program different PMR 446MHz and 464MHz channels and sub tones on the ZA-730. Software is available for free download from www.zartek.co.za. The programming cable is connected to the radio to the USB port on a PC. Other settings such as Squelch level, VOX settings, Display settings, Priority Scan, Passwords can also be programmed. Licence free use of this transceiver limits the frequencies to the 446MHz and 464MHz bands and the power is restricted to 500mW. If an ICASA license is granted for use of other frequencies (400-470 MHz) and power (2W), special software is available from a registered two-way radio dealer. The supplier and manufacturer take no responsibility if a user operates the transceiver not in accordance with ICASA regulation.

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

Battery Information

Initial Use

New batteries are not charged fully in the factory. Please charge the battery for 3 hours at least before first use. This initial charge pre-conditions the battery for full capacity. Failure to charge fully may shorten the life span of the battery. Recharge the battery immediately once it goes flat as it could get damaged if left very flat for long periods. The maximum battery capacity and performance is achieved after three full charge-discharge cycles.

Battery Pack

Please only use a battery which is approved by the manufacturer. Unauthorized batteries may cause failure of protection circuitry and result in bodily injury and property damage.

Safety Information

- 1) Do not throw the battery into fire!
- 2) The battery should be recycled and disposed of correctly.
- 3) Never attempt to disassemble the battery pack.
- 4) Only charge the battery, when the ambient temperature is between 5°C - 40°C.
- 5) Please turn off the radio when the battery is charging. Using the radio during charging will affect the normal charging of the battery pack and will lengthen the charge time.
- 6) During charging, do not plug in/output the power supply or the battery frequently, it would affect battery charging.
- 7) Do not charge when the battery or radio is wet. Please dry it with a soft cloth before charging.
- 8) Do not use the charger, cable or battery if it is damaged, cracked or frayed in any way.
- 9) The battery life is over when the operating time is obviously shorter than normal even if it's fully and correctly charged. Please then replace with a new battery.

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Table of 199 Factory Channel settings (refer to above tables for Frequency / Tone values)

Channel	Frequency	Tone
1 - 8	1 - 8	10
9 - 11	1 - 3	0
12	1a	15
13 - 16	2a - 5a	20
17 - 20	2a - 5a	15
21 - 25	4 - 8	0
26 - 30	1a - 5a	0
31 - 38 vox	1 - 8	1
39 - 46	1 - 8	2
47 - 54	1 - 8	3
55 - 62	1 - 8	4
63 - 70	1 - 8	5
71 - 78	1 - 8	6
79 - 86	1 - 8	7
87 - 94	1 - 8	8
95 - 102	1 - 8	9
103 - 110	1 - 8	11
111 - 118	1 - 8	12
119 - 126	1 - 8	13
127 - 134	1 - 8	14
135 - 142	1 - 8	15
143 - 150	1 - 8	16
151 - 158	1 - 8	17
159 - 166	1 - 8	18
167 - 174	1 - 8	19
175 - 182	1 - 8	20
183 - 190	1 - 8	21
191 - 198	1 - 8	22
199	1	23

Optional Features:

Battery Save Modes

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, Battery Save turns ON. When a signal is received or an operation is performed, Battery Save turns OFF.

Factory programmed on Save On

Squelch

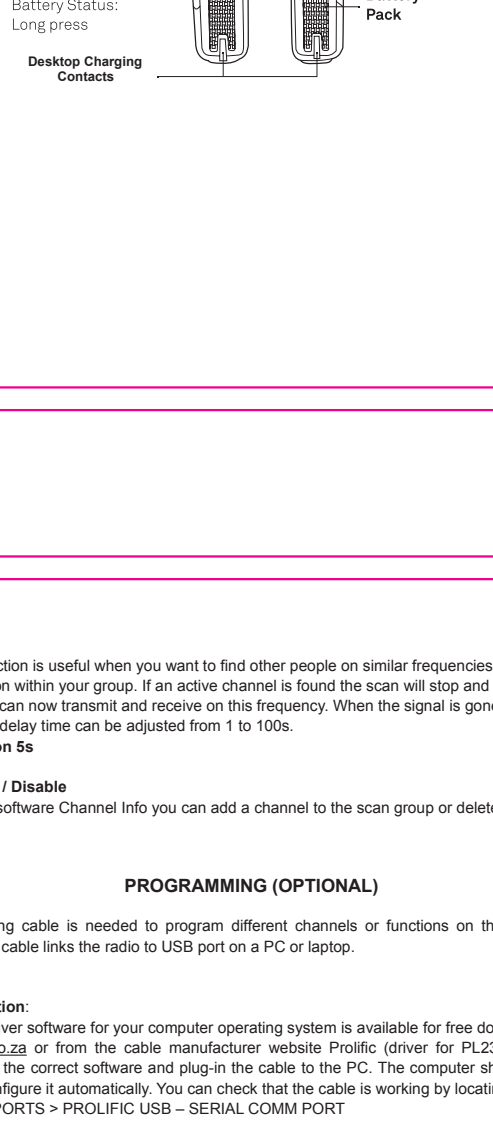
The squelch level is used to adjust the threshold at which signals will open the audio channel. A low level will allow weaker signals to be audible, although with more background noise. However, if weak signals are annoying, the level can be adjusted higher to open the channel only when stronger signals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

You can set up the squelch level from 0 to 9. The higher the squelch level, the less noisy is the signal as only stronger signal are accepted. The lower the squelch level the noisier the signal is, as weak signals are also allowed. As the communication range or obstructions between radios increase, the weaker the signal becomes. It is advised to use a lower squelch level to get further communication range. **Factory programmed on Squelch level 5**

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Radio Overview



To Prolong Battery Life

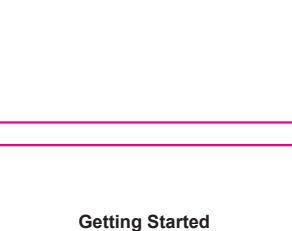
- 1) Battery performance will degrade when the current temperature is below 0°C. A spare battery may be necessary in cold weather. Please keep the cold batteries, as these batteries will work under room temperature.
- 2) If the battery contact is dusty, it may influence its normal use or normal charge.

Battery Storage

- 1) Fully charge a battery before storing for a long time and remove from radio, to avoid battery damage caused by over-discharge.
- 2) Recharge the Li-Ion battery after 6 months as the battery will lose small amounts of charge even when not in use. This regular maintenance will avoid the battery capacity reducing which is caused by over-discharging.
- 3) When storing your battery, keep it in a cool and dry place under room temperature.

STANDARD ACCESSORIES

Carefully unpack the transceiver. We recommend that you identify the items listed below 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



Note: Pictures are only for your references; please take the real objects as standard!

Licence-free bands:

The Frequency column refers to the frequencies that can be selected on the radio. The 8 frequencies in the 446MHz band are represented by the 8 channel numbers, 1-8, in the table. These channels correspond to the channels on other 446MHz license free radios. The 5 frequencies in the 464MHz band are represented by the 5 channel numbers, 1a - 5a, in the second table. These channels correspond to the channels on other 464MHz license free radios.

Default Channel	Frequency	Tone	Channel	Frequency	Tone
1	1	10	9	10	OFF
2	2	10	10	2	OFF
3	3	10	11	3	OFF
4	4	10	12	1a	15
5	5	10	13	2a	20
6	6	10	14	3a	20
7	7	10	15	4a	20
8	8	10	16	5a	20

Channel	[BAND]
1	446.02025
2	446.01875
3	446.01725
4	446.04375
5	446.05625
6	446.02675
7	446.01525
8	446.03975

Channel	[BAND]
1a	463.975
2a	464.125
3a	464.175
4a	464.125
5a	464.375

CTCSS standard tones 1-38	Code #	[Hz]	Code #	[Hz]
1	2	67.0	20	131.8
2	3	71.9	21	136.5
3	4	74.4	22	141.3
4	5	77.0	23	146.2
5	6	79.7	24	151.4
6	8	82.5	25	156.7
7	9	85.4	26	162.2
8	10	88.5	27	167.9
9	11	91.5	28	173.8
10	12	94.8	29	179.9
11	13	97.4	30	186.2
12	14	100.0	31	192.8
13	15	103.5	32	200.5
14	16	107.2	33	208.7
15	17	110.9	34	216.1
16	18	114.8	35	223.7
17	19	118.8	36	231.0
18	20	122.0	37	238.8
19	21	127.3	38	250.3

Sub-tones:

The Tone column shows the sub tone assigned for each frequency. There are 52 QT (CTCSS quiet tones) and 214 DQT (digital quiet tones) that can be selected. These tones are used to prioritise conversations and reduce interference from other users on the same frequency. A CTCSS/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 but only the LED will show frequency activity. Likewise, signals that you transmit will only be heard by parties whose CTCSS/QT/DQT tone matches the tone set up in your transceiver.

There are 38 CTCSS standard tones (1-38) plus 14 extra QT tones. The 38 tones are common on other 446 & 464MHz radios such as the Zartek Pro8 or Pro5. 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.

The display will show CT if a tone has been selected on that channel.

PROGRAMMING (OPTIONAL)

A programming cable is needed to program different channels or functions on the ZA-730. The programming cable links the radio to USB port on a PC or laptop.

USB Installation:

USB cable driver software for your computer operating system is available for free downloading from www.zartek.co.za or from the cable manufacturer website Prolific (driver for PL2303 USB-Serial cable). Install the correct software and plug-in the cable to the PC. The computer should locate the cable and configure it automatically. You can check that the cable is working by locating it in DEVICE MANGER > PORTS > PROLIFIC USB - SERIAL COMM PORT

Software installation:

Programming software for the ZA-730 is available for free download from www.zartek.co.za. Install the software on to a PC by following the installation steps. Once installation is finished, an icon called "ZA-730 User PC Software" will appear on the screen.

Connect the USB cable to the PC and plug-in the twin connector into the speaker/microphone jack on the side of the radio. Ensure that there is a charged battery connected to the radio and switch the radio on. Start the program and a window will appear. The software automatically finds the correct port of the programming cable. Check the Settings > Communication Port to select the correct COM port.

Reading data:

Click on the "READ" left icon and press "Start" to begin reading the data from the radio. Once loaded, the data can be edited to the appropriate channels and settings and then saved or printed for future reference. See below for instructions on each function.

Writing data:

After channel and optional feature data is entered, click the "WRITE" right icon to program the radio. Press "Start" to begin writing the data to the radio. 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.

To change settings select Edit > Channel Info or > Optional Features

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CHARGE TIME is approximately 3 hours from flat to full.
OPERATING TIME is approximately 20 hours with a fully charged battery if used typically on a 5.5:90 duty cycle on 0.5W power.

When the battery capacity runs low, the radio will beep.

- 1) Make sure the radio is switched off during charging or the charging time will be longer and number of possible battery charge cycles reduced.
- 2) Li-Ion batteries do not have memory so they can be recharged at any time. There are a limited number of charge cycles that the battery can handle, typically 500-700 times. To get the maximum use of the battery, only recharge when getting flat. If an almost flat battery is recharged, the charging cycles are not optimized.

Basic Operation

Power On/Off / Volume

Turn the Power Knob clockwise to switch on the radio; you will hear a sound and the display will indicate the current channel number and setting. Adjust volume using this knob and turn counter-clockwise to switch off the radio.

Select a Channel

Press the side buttons to change the channel from 1 to 199. Top button arrow up (1) will increase and lower button arrow down (2) will reduce the channel. Your display will report the channel number.

Refer to the factory channel settings when linking your radio to other radios as it may be necessary to reprogram or adjust the frequency / sub tone (MIC).

Transmit

Keep pressing down the PTT key and speak directly into the microphone (MIC). Hold the radio about 2.5cm to 5cm from your mouth. The radio should be held so that the antenna is vertical. Speak slowly and clear into the radio for a good signal to be received.

The display will show TX when transmitting.

Receive

Release the PTT key to receive a call and adjust the volume if needed.

The display will show RX when a signal is being received.

Communication Range

Range will depend on the type of terrain that you are communicating across. The ZA-730 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:

- Indoors or Shopping centre 300m-1200m
- Building 5-30 stories.

Getting Started

Fitting the Belt Clip Case

Slide the radio into case until it clicks.

To remove, gently pull the top of case and slide radio up.

Be cautious from knocking or pressing the radio when carrying on a belt.