GME Electrophone

TX7200

UHF COMMERCIAL HANDHELD TRANSCEIVER

INSTRUCTION MANUAL

WARNING: SAFETY INFORMATION

The TX7200 is a radio transmitting device.

- When transmitting, keep the antenna more than 25 mm from any part of the head or body.
- Do not transmit near electrical blasting equipment or in explosive atmospheres.
- Do not allow children to operate a radio transmitter unsupervised.

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INTRODUCTION

The TX7200 is a rugged, easy to operate, full featured commercial hand-held transceiver operating in the 450–520 MHz UHF band. The TX7200 assembly is a very strong structure with a single diecast frame housed in a polycarbonate alloy case.

The range of a UHF FM signal is usually considered 'line-of-sight'. Generally the range of your TX7200 radio will vary according to your location and the height of your antenna. UHF signals are easily blocked by hills or large buildings so you won't get as much range in a valley or built-up city areas as you will from a hilltop or in open country. If you are having trouble contacting someone, try moving to an open space or a higher location. Typical portable range is around 3 to 5 km depending on the terrain. Moving to a higher location or using a repeater could extend its range.

Your TX7200 is supplied with a 7.2 Volt 1200 mAh Ni-MH rechargeable battery pack. When the battery is new, it must be fully charged before being used for the first time. If left unused your TX7200's battery pack will discharge itself within a few months. If you have not used your TX7200 for some time, you will need to recharge the battery pack before use.

The battery pack is a sealed unit. There are no user serviceable parts inside.

WARNING: Use only GME Electrophone approved battery packs and chargers. The use of other types may be dangerous and will void the warranty.

Removing the Battery Pack

The battery pack is a self contained unit which can be removed from the radio as follows:

1. Hold the radio face down in one hand.
2. With the thumb of one hand, push the locking tab upwards towards the top of the radio while swinging the top half of the battery pack away from the radio with the other hand.
3. Once clear of the locking tab, lift the battery upwards away from the radio. The base of the battery pack is retained in a slot in the metal frame at the base of the radio.

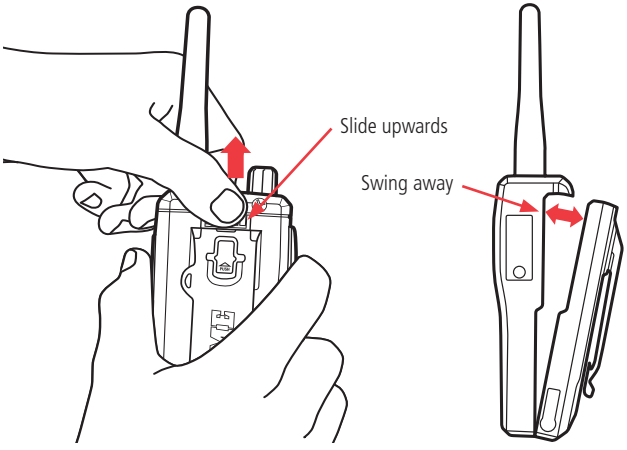
Re-fitting the Battery Pack

1. Carefully position the tongue in the base of the battery pack into the slot in the metal frame at the base of the radio.
2. Swing the top half of the battery pack into place against the radio.
3. Using both thumbs (one each side of the belt clip) press the top half of the battery firmly onto the radio until the locking tab clicks downward locking the battery pack into place.

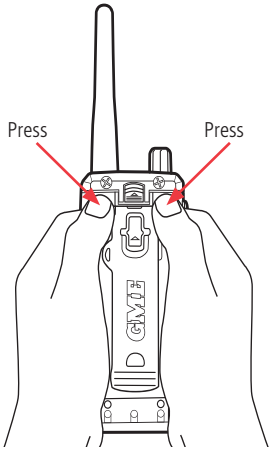
Charging the Battery Pack

Your TX7200 should be charged using the BCD001 Rapid Charger. The BCD001 rapid charger can recharge the battery pack in around 1 hour. For further information on charging your battery and tips on conserving battery power, see section on 'Maintaining Your Battery Pack' on page 6.

To Remove Battery Pack



To Refit Battery Pack



Turning the TX7200 on or off

Rotate the volume control clockwise past the 'click' to turn the TX7200 on. Rotate the control fully counter clockwise past the click to turn the radio off.

Adjusting the receiver volume

While receiving a signal, rotate the volume control to achieve a comfortable listening level. If there are no signals present, press the Squelch key briefly (if available) to open the squelch, then adjust the volume while listening to the receiver's background noise. When finished, briefly press the Squelch key again to return the receiver to the quiet state.

Note: The minimum setting of the volume control has been factory preset so that, even with the volume turned right down, you can still safely listen to an incoming signal with your ear against the speaker (telephone style).

Selecting Channels

To change channels, briefly press the ▲ key to step up one channel or the ▼ key to step down one channel. Holding either ▲ or ▼ will cause the radio to step through the channels automatically at a faster rate. The 125 available channels are numbered 1 - 99, A0 - A9, B0 - B9 and C0 - C5

Alphanumeric labels

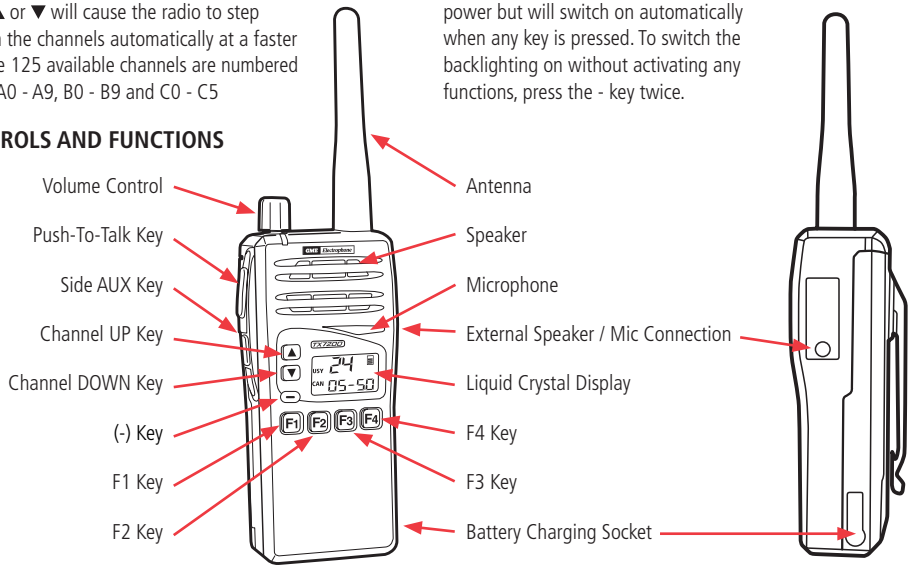
As well as identifying channels by their channel number, channels may be programmed with a 5 character alphanumeric label. Using labels with meaningful names makes it much easier to identify channels. Alphanumeric labels are pre-programmed into your radio by your dealer.

e.g. The channel you normally contact your office on might be labelled OFFCE while a construction site channel might be labelled SITE1. In this way you no longer need to remember which channel numbers to select, you simply select the required channel by its label.

Activating the Backlighting

Your TX7200's LCD features built-in backlighting. The backlighting is normally switched off to conserve battery power but will switch on automatically when any key is pressed. To switch the backlighting on without activating any functions, press the - key twice.

CONTROLS AND FUNCTIONS



Transmitting

Before transmitting, check to see if the channel is already in use ('BUSY' will be displayed and the LED on the top of the radio will be green). If the channel is busy, you should wait until it is clear before transmitting.

To transmit, press the Push-To-Talk (PTT) switch on the left-hand side of the radio. Hold the radio about 5-8 cms from your face with the antenna vertical and speak into the built-in microphone located just below the speaker. When talking, speak at a normal voice level. The microphone is quite sensitive so it is not necessary to raise your voice or shout.

Receiving

Note: Your radio may be programmed with options that could affect the way your radio behaves when it receives a call from another radio.

Normal Reception

Your radio will normally be muted (squelched) so that it is quiet when there are no signals. When a transmission is received, the radio will automatically unmute itself to allow you to hear the call. When receiving a signal, adjust the volume control as desired for a comfortable listening level.

The BUSY Indicator

Whenever the channel is active, the BUSY indicator will appear on the display and the green LED on the top of the radio will light. However, depending on the muting options selected on your radio, you may not always hear any sound from the speaker. This can happen when others are sharing the channel but their calls are not meant for you. For this reason it is important that you visually check that the channel is not busy before making a call to ensure you do not accidentally talk over someone else.

PROGRAMMABLE FUNCTIONS

The front panel keys are able to perform multiple functions depending on how they are programmed. Since most of these functions can be programmed into any of the front panel keys, no specific key can be addressed as performing a particular function. The following table can be used to mark the specific features that may be programmed into your radio against the front panel keys that will access them.

Your TX7200 will have been programmed by the dealer to suit your specific requirements by enabling only those features that are useful to your operation. Your dealer will show you how to use those features.

Tick the boxes that match the function keys on your radio with the specific feature programmed by your dealer.

Function	F1	F2	F3	F4	-	Aux
Disabled						
Function/Menu						
Keylock						
Transmit Hi/Lo Power						
Monitor						
Squelch						
Talk-Around						
Scan						
OS/GS Toggle						
Quiet						
Alphanumeric						
Priority						
Call						
Channel Recall						
Speed Dial Selcall						
Channel Recall/Speed Dial Selcall						

Shifted Function *	F1	F2	F3	F4	-	Aux
Disabled						
Function/Menu						
Keylock						
Transmit Hi/Lo Power						
Monitor						
Squelch						
Talk-Around						
Scan						
OS/GS Toggle						
Quiet						
Alphanumeric						
Priority						
Call						
Channel Recall						
Speed Dial Selcall						
Channel Recall/Speed Dial Selcall						

* Allows access to a second feature programmed into any key by first pressing the assigned Function key

MAINTAINING YOUR BATTERY PACK

For information on removing, fitting and recharging the battery pack, refer to 'GETTING STARTED' on page 3 of this manual.

Your TX7200 is supplied with a 7.2 Volt 1200 mAh Ni-MH (Nickel Metal Hydride) rechargeable battery pack. When the battery pack is new, it must be fully charged before being used for the first time.

If left unused, your TX7200's battery pack will discharge itself within a few months. If you have not used your TX7200 for some time, you will need to recharge the battery pack before use.

The battery pack is a sealed unit. There are no user serviceable parts inside.

WARNING: Use only GME Electrophone approved battery packs and chargers. The use of any other types may be dangerous and will void any warranty.

Low Battery Indicators

When the battery voltage drops to around 6 Volts, your TX7200 will give 6 quick beeps, BATT will flash on the display and the Tx/Busy LED will flash 'Orange' to indicate that the battery needs to be charged. You should recharge the battery pack as soon as possible.

If you have been transmitting using the High Power setting, you can extend the life by switching to Low transmit power.

Battery Charging

It is recommended that you charge your TX7200's battery using the BCD001 rapid charger. The BCD001 rapid charger can recharge your battery pack in around 1 hour, less if there is still some charge remaining.

USE ONLY GME ELECTROPHONE APPROVED CHARGERS.

USE OF OTHER TYPES MAY BE DANGEROUS AND WILL VOID THE WARRANTY.

DO NOT CONNECT YOUR VEHICLE'S 13.8 VOLT BATTERY SUPPLY TO THE CHARGING SOCKET AS DAMAGE WILL RESULT.

Cycling your Battery Pack

Cycling of your Ni-MH battery should not be necessary. However, for maximum performance we recommend that you try to fully discharge the battery from time to time before recharging it.

Battery Usage

The time taken to discharge the battery pack will depend on how you use your TX7200. The 1200 mAh battery pack is powerful enough for a full days use under average conditions.

Conserving Battery Power

The TX7200 has built in power saving features to help you get the maximum amount of time between charges from your Ni-MH battery pack. If you need to operate your TX7200 in a situation where you require maximum battery life (e.g. a remote site where there is no convenient recharging facility nearby), the following hints can greatly reduce the amount of power drawn from the battery pack.

Sleep Mode: The TX7200 will automatically enter the 'Sleep' mode after around 30 seconds of inactivity (i.e. no transmission or reception).

While sleeping, it will still check for incoming signals but it will draw only about one fifth of the power from the battery. As soon as a signal is received or any keys are pressed, the TX7200 will wake up again. This sleep function is automatic and by itself can greatly extend the battery life in standby mode by many hours.

Quiet Mode: If 'Quiet' mode is selected, the TX7200 will remain 'asleep' on Quiet channels even if they are busy unless your Selcall Ident is received.

Scanning: The TX7200 draws more power from the battery when scanning than when monitoring a single channel. This is because it must wake more often to monitor each channel for activity. You can squeeze that extra bit of life from the battery by avoiding any unnecessary scanning. In addition, scanning several channels increases the chance of finding a signal thereby keeping the receiver awake and the squelch open more often.

Low Transmit Power Setting: The transmitter has both HIGH and LOW power settings. If you are only operating over short distances, are in a reasonably high location or are close to a local repeater, try using the LOW transmit power setting. This reduces the transmitter power from 5 Watts to 1 Watt, effectively tripling the 'talk' time available.

General: Continuously monitoring a busy channel will reduce the battery life since incoming signals will keep the receiver awake and the squelch will stay open for longer periods of time. This will draw much more power from the battery pack. If you are expecting to receive a Selcall on a busy channel, program that channel for 'Quiet' operation and select the Quiet mode. The TX7200 will then stay 'asleep' until your Selcall Ident is received.

SPECIFICATIONS

General

Compliance:	AS/NZS 4295
Frequency Range:	450 - 520 MHz
Number of Channels:	125
Channel Spacing:	25 kHz / 12.5 kHz
Operating Mode:	Simplex or half duplex .
Scanning Speed:	40 ms per channel (25 channels per second)
Antenna Impedance:	50 Ohms nominal
Battery Voltage:	7.2 Volts DC nominal
Operating Voltage Range:	6 - 9 Volts DC
Low Battery Alarm:	6.2 Volts DC
Reverse Voltage Protection:	Shunt Diode
Operating Temperature:	-10° C to +60° C

Transmitter

RF Output:	High: 5 Watts Low: 1 Watt
RF Switching Bandwidth:	70 MHz
Spurious Emission:	< - 30 dBm
Frequency Stability:	± 5 PPM
Modulation:	FM
Maximum Deviation:	< ± 5 kHz at + 20 dB Limiting
Transmit Frequency Response:	+ 6dB per octave 300 Hz to 3 kHz, + 1, - 3 dB
Audio Signal to Noise:	> 45 dB.
Current Consumption (max):	1.8 Amps @ 5 Watts 0.8 Amps @ 1 Watt

Receiver

RF Switching Bandwidth:	70 MHz
Intermediate Frequencies:	1st: 21.4 MHz 2nd: 450 kHz
Sensitivity:	- 122 dBm for 12 dB SINAD.
Adjacent Channel Selectivity:	70 dB
Intermodulation:	72 dB
Blocking:	95 dB
Spurious Rejection:	65 dB
Spurious Emission:	-80 dBm
Audio Output Power:	0.5 watts at <10% distortion.
Audio Signal to Noise:	> 45 dB Unweighted.
Receiver Frequency Response:	- 6 dB per octave de-emphasis, 300 Hz to 3 kHz, + 1, - 3 dB.
Current Consumption:	15 mA Sleep Mode 40 mA muted 190 mA Full Volume

Mechanical Specification & Connectors

Dimensions:	135mm (W) x 63mm (D) x 40mm (H)
Weight:	390 grams
Antenna:	TNC Female

All values are typical unless otherwise stated and are subject to change without notice or obligation.

WARRANTY

GME ELECTROPHONE limit this warranty to the original purchaser of the equipment.

GME ELECTROPHONE warrant the TX7200 to be free from defects in material and workmanship for a period of twenty four (24) months from the date of purchase from their authorised dealer.

GME ELECTROPHONE warrant the TX7200 Battery Pack to be free from defects in material and workmanship for a period of three (3) months from the date of purchase from their authorised dealer.

Should the product require servicing during this period, all labour and parts used to effect repairs will be supplied free of charge. GME ELECTROPHONE reserve the right to determine whether damage has been occasioned by accident, misuse or improper installation whereby the warranty would be void, including:

Transceivers which have been damaged due to:

1. Incorrect or reverse polarity connection to a battery or power supply.
2. Connection to an incorrect supply voltage.
3. Operation without an antenna or by connection to an antenna which has been incorrectly installed, resulting in damage to the transceiver's output circuit.
4. Effects of water or moisture penetration.
5. Non-factory modifications.

Procedure to be followed by claimant: In the event of a defect occurring during the warranty period, the original Purchaser may return the defective unit along with suitable proof of purchase date (i.e. receipt, docket, credit card slip etc.) and a full description of the defect to the Dealer from whom the unit was purchased. All freight charges incurred for transportation by the Dealer or GME ELECTROPHONE are the Purchaser's responsibility.

GME Electrophone after sales service

Your ELECTROPHONE transceiver is especially designed for the environment encountered in portable applications. The use of all solid state circuitry, careful design and rigorous testing, result in high reliability. Should failure occur however, GME ELECTROPHONE maintain a fully equipped service facility and spare parts stock to meet the customer's requirements long after expiry of the warranty period.

GME Electrophone

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