

# **LUITON**

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## **LT-505Max**

Professional Mobile CB Radio

**USER'S MANUAL**

# INTRODUCTION

Welcome to the world of Citizens Band radio communications. Your Luiton radio is an advanced mobile radio designed for use in the Citizens Band (CB) Radio Service. It will operate on any of the 40 AM frequencies authorized by the Federal Communications Commission (FCC). Your Radio features a superheterodyne circuit with PHASE LOCKED LOOP techniques to assure precise frequency control.

## **Safety Notice**

The antenna used for this radio must be properly installed and maintained and must provide a separation distance of at least 16.92 inches (43 cm) from all persons and must not be collocated or operated in conjunction with any other antenna or transmitter. Never transmit if any person is closer than the specified distance to the antenna.

Note that Luiton does not specify or supply any antenna with this transceiver. While a 0 dBi gain antenna is normal for a typical installation, the above limit applies to any antenna with up to 3 dBi gain.

## **CB license requirement**

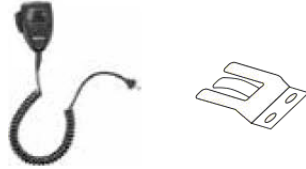
U.S. users no longer need to apply for a license to use a CB radio. However, CB radio is still considered a “license by rule” service. This means that, while the FCC permits CB station operation without station identification, station operators are still required to comply with the Communications Act and with the rules of CB Radio Service. (For more information on U.S. radio rules, visit the FCC website at [www.fcc.gov](http://www.fcc.gov).)

## INCLUDED IN YOUR PACKAGE

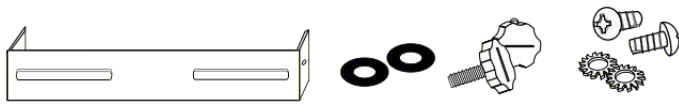
If any of these items are missing or damaged, immediately contact your place of purchase or [www.luiton.com](http://www.luiton.com).



LT-505Max Mobile radio



Microphone and hook



Mounting bracket, knobs, and mounting hardware

► Other printed materials

**NOTE:** You must use a CB antenna (sold separately) with this radio.

## PARTS OF THE RADIO

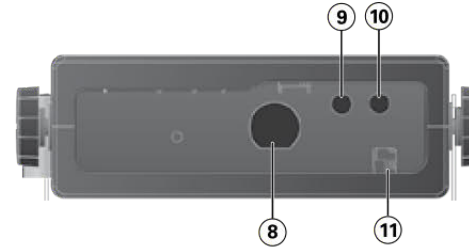
Front



| No.  | Name              | Details   |
|------|-------------------|---|
| 1    | CB/PA Switch      | Switches between CB Radio and PA systems  |
| 2    | Volume/Power      | Adjusts the volume, Turns radio on and off.                                     |
| 3    | 4-Pin Mic         | Plugs in microphone   |
| 4    | CH9               | Sets the radio to CH9 (Emergency).  |
| 5, 6 | Channel Selectors | Press ▲ or ▼ to select which channel the radio will transmit or receive on.     |
| 7    | Squelch knob      | Adjusts the level at which the radio squelches or suppresses weak radio signals |

**NOTE:** FCC rules reserve Channel 9 for motorist assistance and other emergency communications. Channel 9 should only be used in situations where there is immediate danger to the safety of individuals or the protection of property.

Back



| No. | Name                      | Details   |
|-----|---------------------------|---|
| 8   | Antenna Connector         | Connects to a male PL-259 external antenna cable (antenna sold separately). |
| 9   | PA Speaker Jack           | See Connecting external speakers, page 6.                                   |
| 10  | External Speaker Jack     | See Connecting external speakers, page 6.                                   |
| 11  | 12/24V Volt DC Power Cord | Connects to DC power supply, page 4.  |

## Microphone

Press and hold the PTT button to transmit on the selected channel. Release the button to listen for a response.

**NOTE:** For the best sound quality, hold the microphone about 2 inches away from your mouth and speak in a normal voice.

**NOTE:** Make sure you have read and understood part 95 of the FCC rules and regulations before using the transmitter.



## INSTALLATION

### Connect the microphone

Align the microphone connector with the jack on the front of the radio. Push the connector in firmly and secure it with the locking screw.

### Connect the power

You can connect the radio to any standard 12/24 volt DC power source, with either a positive or negative ground. If you don't know whether your power supply uses a positive or negative ground, consult the manual for your power supply or contact the manufacturer.

**WARNING!** DO NOT connect this equipment to a power supply if you are not absolutely certain of the grounding type!

- 1) Make sure your power supply is turned off.
- 2) For power supplies with a NEGATIVE ground, connect the RED lead on the radio to the power supply's POSITIVE (+) pole, and connect the BLACK lead to the power supply's NEGATIVE (-) pole or to a neutral ground such as the chassis.  
Turn on your power supply.
- 3) Turn the radio's Volume knob clockwise to power on the radio.

### Installing the mounting bracket

When choosing the location for the radio's mounting bracket, keep the

following things in mind:

- ▶ Pick a location that does not block your view, interfere with your vehicle's controls, or hinder your driving.
- ▶ Make sure the radio and microphone are not in front of an airbag.
- ▶ Pick a solid surface that can support the bracket and radio weight.
- ▶ Make sure there's enough room. (You may want to put the radio in the bracket when you're choosing where to install the bracket.)

Once you choose the location, use the included, self-tapping screws to attach the mounting bracket and the microphone bracket to your vehicle (you don't have to drill holes). Slide the radio into the bracket and use the included knobs to hold it at the preferred angle.

### Connecting an external antenna

**WARNING!** The antenna used for this radio must be installed at least 16.92 inches (43 cm) away from all persons. The antenna must not be collocated or used with any other antenna or transmitter.

**CAUTION:** Never operate your radio with no antenna or with a damaged antenna cable. This can damage the radio.

You will need to purchase an antenna to operate the radio. There are two basic types of mobile CB antennas—full-length whips and loaded whips—with a wide variety of mounts to suit different vehicle locations.

- ▶ Choose an antenna that matches the specifications of this radio.
- ▶ Follow the manufacturer's installation instructions carefully.
- ▶ Tune your antenna using a Standing-Wave Ratio (SWR) meter: set the radio to channel 20, and adjust the antenna until the SWR is as close as 1:1 as possible.

### Connecting external speakers

Your radio supports two external speakers for remote monitoring and public address features. External speakers are sold separately.

To prevent feedback, direct all speakers away from the microphone.

|            | External monitor  | PA speaker  |
|------------|---|---|
| Function   | Remote receiver monitoring or substitution for internal speaker         | Public address broadcasts                                   |
| Impedance  | 8 Ohms  | 8 Ohms  |
| Rating     | 3 Watts   | 3 Watts   |
| Connect to | <b>EXT.SP.</b> jack (1/8-in/3.5 mm)                                     | <b>PA.SP.</b> jack (1/8-in/3.5 mm)                          |
| Notes      | The internal speaker is disabled when an external speaker is connected. | You must have a PA speaker connected to use the PA feature. |

**CAUTION:** Make sure the SWR is **less than 2:1** before using the radio. An SWR higher than 2:1 can damage the transmitter.

Your dealer can help you select the antenna that is best for your needs. Consult the specifications in the back of this manual for detailed transmitter and antenna information.

## OPERATION AND MAINTENANCE

### Basic operation

|                       |   |
|-----------------------|---|
| Turning the radio on  | Turn the <b>Volume</b> knob clockwise until the display backlight comes on.   |
| Turning the radio off | Turn the <b>Volume</b> knob counter-clockwise until it clicks and the display backlight turns off.  |
| Selecting a channel   | Press <b>▲</b> or <b>▼</b> buttons to select a channel.   |
| Changing the volume   | Turn the <b>Volume</b> knob clockwise to increase the volume; turn it counter-clockwise to decrease the volume.   |
| Transmitting          | <ul style="list-style-type: none"> <li>– Tune the radio to the channel you want to transmit on, and listen to make sure the channel is clear.</li> <li>– Press and hold the <b>PTT</b> button.</li> <li>– Hold the microphone about 2 inches away from your mouth and speak in a normal voice.</li> <li>– Release the button to listen for a response.</li> </ul> |

|                                     |   |
|-------------------------------------|---|
| Using the PA feature                | <ul style="list-style-type: none"> <li>– Toggle the <b>CB/PA</b> switch to <b>PA</b>; this turns off the CB radio and activates the PA speaker.</li> <li>– On the microphone, press and hold the <b>PTT</b> button.</li> <li>– Hold the microphone about 2 inches away from your mouth and speak in a normal voice. Use the <b>Volume</b> knob to adjust the volume of the PA speaker.</li> <li>– When you're finished broadcasting, release the button and move the <b>CB/PA</b> switch back to CB.</li> </ul> |
| Adjusting the squelch level         | <ul style="list-style-type: none"> <li>– To filter out weaker signals and background noise, turn the knob clockwise to increase the squelch level.</li> <li>– To decrease the squelch level so you can hear weaker radio signals, turn the knob counter-clockwise.</li> </ul>   |
| Using the Instant Channel 9 feature | <ul style="list-style-type: none"> <li>– Press the <b>CH9</b> button; the radio automatically tunes to channel 9.</li> <li>– Press the <b>CH9</b> button again to return to the previous channel.</li> </ul>  |

**NOTE:** Make sure you read and understood part 95 of the FCC rules and regulations before using the transmitter.

### Maintenance

Every six to twelve months, check to make sure that:

- ▶ The Voltage Standing Wave Ratio (VSWR) is less than 2:1.
- ▶ All electrical connections are secure and free of corrosion.
- ▶ The antenna cable shows no wear or damage.
- ▶ All mounting screws are securely fastened.

## TROUBLESHOOTING

If your radio is not performing to your expectations, please try these simple steps. If these steps don't solve your problem.

visit [www.luiton.com](http://www.luiton.com) for help.

| Problem:                       | Things to try:   |
|--------------------------------|--|
| Radio won't turn on (no power) | <ol style="list-style-type: none"> <li>1. Check the radio's power cord and all connections.</li> <li>2. Check the fuse in the radio's power cord.</li> <li>3. Check your vehicle's electrical system.</li> </ol> |
| Poor reception                 | <ol style="list-style-type: none"> <li>1. Adjust the squelch level.</li> <li>2. Check the antenna, cable and connectors.</li> <li>3. Check operation mode of the radio.</li> </ol>                               |
| Background noise               | <ol style="list-style-type: none"> <li>1. Adjust the squelch level.</li> </ol>   |
| Weak transmission              | <ol style="list-style-type: none"> <li>1. Check the antenna, cable and connectors.</li> <li>2. Check the antenna grounding.</li> <li>3. Check for corrosion on the connectors.</li> </ol>                        |
| PA won't broadcast             | <ol style="list-style-type: none"> <li>1. Check the CB/PA toggle is set to PA.</li> <li>2. Check the mike's PTT button is pressed in when you talk.</li> </ol>   |

### Service and repair information

- ▶ Service, repair, or alignment should only be attempted by a qualified and/or licensed radio technician.
- ▶ When ordering parts, it is important to specify the correct model number of this radio.
- ▶ It is the user's responsibility to make sure the radio is operating in accordance with the FCC Citizens Radio Service regulations at all times.

## SPECIFICATIONS

| General               |  |
|-----------------------|--|
| Channels              | 40 AM  |
| Frequency Range       | 26.965 to 27.405 MHz   |
| Frequency Control     | Phase Locked Loop (PLL) synthesizer                                |
| Frequency Tolerance   | ±0.005%  |
| Operating Temperature | -30°C to +50°C   |
| Microphone            | Plug in type, electret   |
| Input Voltage         | 12/24 V DC nom. (+ or - ground)                                    |
| Current Drain         | TX full mod., 1.4A   |
| RX                    | with max. audio output, 0.8A                                       |
| Size                  | 4-7/8" W x 7-1/2" D x 1-3/4" H                                     |
| Weight                | 1 lb. 3 oz.  |
| Antenna Connector     | UHF, SO-239  |
| LCD Meter             | Indicates relative RF output and received signal strength          |
| Transmitter           |  |
| Power Output          | 4 Watts  |
| Modulation            | Class B amplitude modulation                                       |
| Freq. Response        | 300-2500 Hz  |
| Output Impedance      | 50 ohms, unbalanced  |
| Receiver              |  |
| Sensitivity           | 0.8μV for 10 dB; (S + N) /N typical (limit 1.6μV)                  |
| Selectivity           | 6 dB @ 7kHz, 70 dB @ 10kHz typical                                 |
| Image Rejection       | 65 dB typical  |
| I.F. Frequency        | Double Conversion Superheterodyne<br>1st 10.700 MHz<br>2nd 450 kHz |

|                              |   |
|------------------------------|---|
| Automatic Gain Control (AGC) | less than 10dB change in audio output for inputs from 10 to 50,000 microvolts |
| Squelch                      | Adjustable; threshold less than 1.25µV  |
| Audio Output Power           | 3 watts max. into 8 ohms  |
| Freq. Response               | 300 to 2000 Hz  |
| Distortion                   | less than 10% at 0.5 watts, 1000Hz  |
| Internal Speaker             | 8 ohms, 2 watts round   |

Specifications and features are subject to change without notice.

## FCC PART 15 & IC Compliance Information

### FCC Compliance

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

Avis de conformité à la FCC : Ce dispositif a été testé et s'avère conforme à l'article 15 des règlements de la Commission fédérale des communications (FCC). Ce dispositif est soumis aux conditions suivantes: 1) Ce dispositif ne doit pas causer d'interférences nuisibles et; 2) Il doit pouvoir supporter les parasites qu'il reçoit, incluant les parasites pouvant nuire à son fonctionnement.

Tout changement ou modification non approuvé expressément par la partie responsable pourrait annuler le droit à l'utilisateur de faire fonctionner cet équipement.

### IC Compliance

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept

any interference, including interference that may cause undesired operation of the device.

Changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

Cet appareil est conforme aux normes RSS exemptes de licences d'Industrie Canada. Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférences nuisibles et (2), il doit pouvoir accepter les interférences, incluant celles pouvant nuire à son fonctionnement normal.

Tout changement ou modification non approuvé expressément par la partie responsable pourrait annuler le droit à l'utilisateur de faire fonctionner cet équipement.

## ONE-YEAR LIMITED WARRANTY

WARRANTOR: BOND TELECOM CO.,LTD. ("Luiton")

ELEMENTS OF WARRANTY: Luiton warrants, for one year, to the original retail owner, this Luiton Product to be free from defects in materials and craftsmanship with only the limitations or exclusions set out below.

WARRANTY DURATION: This warranty to the original user shall terminate and be of no further effect 12 months after the date of original retail sale. The warranty is invalid if the Product is (A) damaged or not maintained as reasonable or necessary, (B) modified, altered, or used as part of any conversion kits, subassemblies, or any configurations not sold by Luiton, (C) improperly installed, (D) serviced or repaired by someone other than an authorized Luiton service center for a defect or malfunction covered by this warranty, (E) used in any conjunction with equipment or parts or as part of any system not manufactured by Luiton, or (F) installed or programmed by anyone other than as detailed by the owner's manual for this product.

STATEMENT OF REMEDY: In the event that the product does not conform to this warranty at any time while this warranty is in effect, warrantor will either, at its option, repair or replace the defective unit

and return it to you without charge for parts, service, or any other cost (except shipping and handling) incurred by warrantor or its representatives in connection with the performance of this warranty. Warrantor, at its option, may replace the unit with a new or refurbished unit. THE LIMITED WARRANTY SET FORTH ABOVE IS THE SOLE AND ENTIRE WARRANTY PERTAINING TO THE PRODUCT AND IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES OF ANY NATURE WHATSOEVER, WHETHER EXPRESS, IMPLIED OR ARISING BY OPERATION OF LAW, INCLUDING, BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THIS WARRANTY DOES NOT COVER OR PROVIDE FOR THE REIMBURSEMENT OR PAYMENT OF INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states do not allow this exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you.

**LEGAL REMEDIES:** This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. This warranty is void outside the United States of America.

**PROCEDURE FOR OBTAINING PERFORMANCE OF WARRANTY:** If, after following the instructions in the owner's manual you are certain that the Product is defective, pack the Product carefully (preferably in its original packaging). The Product should include all parts and accessories originally packaged with the Product. Include evidence of original purchase and a note describing the defect that has caused you to return it. The product should be shipped freight prepaid, by traceable means, to warrantor at:





**BOND TELECOM CO.,LTD.**

[www.luiton.com](http://www.luiton.com)