

# Uniden®



## PRO 520XL

# Professional Mobile CB Radio

# INTRODUCTION

Welcome to the world of Citizens Band radio communications. Your Uniden 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 Uniden 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.

## Description

Your UNIDEN CB Radio represents the highest quality communications device designed for use in the Citizens Band Radio Service. It will operate on any of the 40 AM frequencies authorized by the Federal Communications Commission (FCC).

***The Citizens Band Radio Service is under the jurisdiction of the Federal Communications Commission (FCC). Any adjustments or alterations which would alter the performance of the transceiver's original FCC type acceptance, or which would change the frequency determining method, are strictly prohibited.***

***Replacement or substitution of crystal, transistors, ICs, regulator diodes, or any other part of a unique nature, with parts other than those recommended by UNIDEN AMERICA CORPORATION, may cause violations of the technical regulations in Part 95 of the FCC Rules or in violation of type acceptance requirements in Part 2 of the rules.***

***Part 95 Subpart D (FCC Rules) is included and should be referenced for all FCC Rules and Regulations that apply when using a Citizen's Band (CB) Transceiver Radio.***

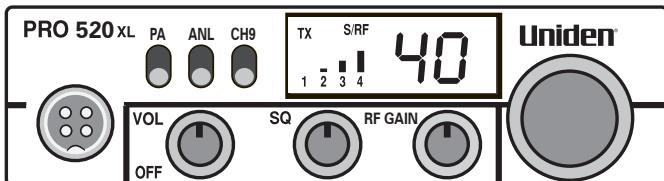
## Uniden contact information

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*You can get answers 24/7 at our website: [www.uniden.com](http://www.uniden.com).*

# INCLUDED IN YOUR PACKAGE

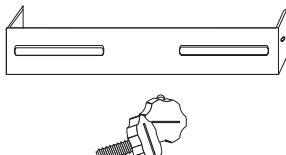
If any of these items are missing or damaged, immediately contact your place of purchase or Uniden's Parts Department.



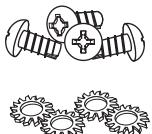
PRO520 XL Mobile radio



Microphone and hook



Mounting bracket and knobs



Mounting hardware



Other printed materials

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

## PARTS OF THE RADIO

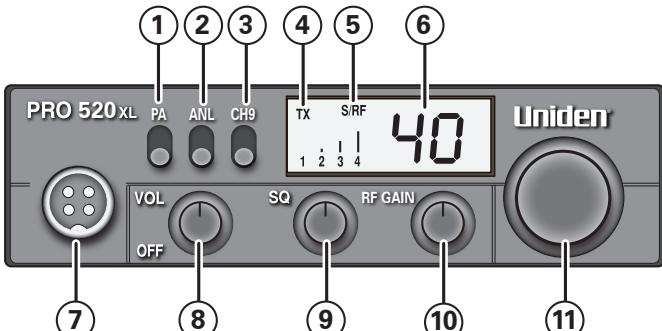
### Front

#### 1. PA Switch

Activates the Public Address feature (see *Connecting external speakers*).

#### 2. ANL Switch

Activates the Automatic Noise Limiter feature, which reduces background noise from the car engine and other sources. Move this switch up to turn on the ANL feature.



3. **CH9 Switch**  
Switches the radio over to channel 9.
4. **TX LED**  
Indicates when the radio is transmitting.
5. **S/RF (Signal/RF) Meter**  
Shows the strength of the received signal or the RF output.
6. **Channel Indicator**  
Displays the channel currently in use.
7. **Microphone Jack**  
Connects to the included detachable electret microphone.
8. **Volume Control**  
Powers on the radio and adjusts the volume.
9. **Squelch knob**  
Adjusts the level at which the radio squelches or suppresses weak radio signals.
10. **RF Gain Knob**  
Adjusts the level of the signal reception.
11. **Channel Selector**  
Selects which channel the radio will transmit or receive on.

## Back

12. **Model label**  
Shows the model number, FCC ID number and serial number.

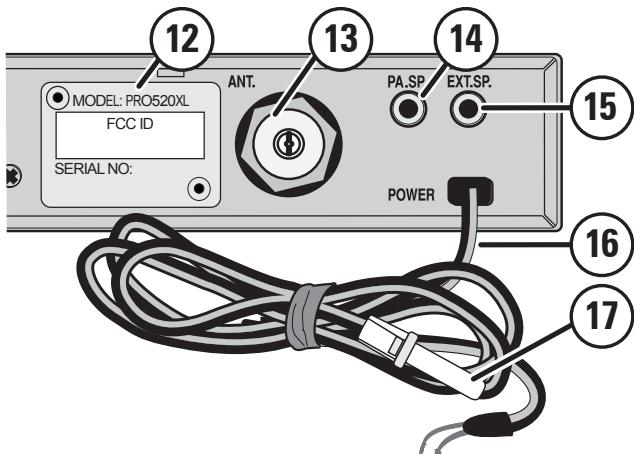
13. **Antenna Connector**  
Connects to a male PL-259 external antenna cable (antenna sold separately).

14. **PA Speaker Jack**  
See *Connecting external speakers*, below.

15. **External Speaker Jack**  
See *Connecting external speakers*, below.

16. **12 Volt DC Power Cord**

17. **Fuse casing**



## Microphone

18. **Push-to-talk (PTT) button**



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

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## 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 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.

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

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- 1) Make sure your power supply is turned off.
- 2) 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.
- 3) Turn on your power supply.
- 4) 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 weight of the bracket and the radio.
- ▶ 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

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**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.*

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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.

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

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Your Uniden 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.

## 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.*

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	<b>External monitor</b>	<b>PA speaker</b>
Function	Remote receiver monitoring or substitution for internal speaker	Public address broadcasts
Impedance	8 Ohms	8 Ohms
Rating	7 Watts	7 Watts
Connect to	<b>EXT.SP.</b> jack ( $\frac{1}{8}$ -in/3.5 mm)	<b>PA.SP.</b> jack ( $\frac{1}{8}$ -in/3.5 mm)

	External monitor	PA speaker
Notes	The internal speaker is disabled when an external speaker is connected.	You must have a PA speaker connected to use the PA feature.

*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.*

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

## 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	Turn the <b>Channel</b> knob clockwise to move up the channel list. Turn it counter-clockwise to move down the channel list.
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>– Move the PA switch up; this turns off the CB radio and activates the PA speaker.</li> <li>– On the microphone, press and hold the PTT button.</li> <li>– Hold the microphone about 2 inches away from your mouth and speak in a normal voice. Use the Volume knob to adjust the volume of the PA speaker.</li> <li>– When you're finished broadcasting, release the button and move the PA switch back down.</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>

Adjusting the RF gain	<ul style="list-style-type: none"> <li>- Turn the knob clockwise to boost the reception of weak signals, or counter-clockwise to reduce the reception of strong signals.</li> <li>- In areas where strong signals cause noise and distortion, reduce the RF gain (turn the knob counterclockwise).</li> <li>- In areas where weaker signals are difficult to hear, increase the RF gain (turn the knob clockwise).</li> </ul>
Using the Instant Channel 9 feature	<ul style="list-style-type: none"> <li>- Move the CH9 switch up; the radio automatically tunes to channel 9 and disables the channel selector.</li> <li>- Move the switch back down to return to the previous channel and enable the channel selector.</li> </ul>

## Emergency operation

- 1) Press **9/19/NORM** or turn Channel Selector knob to Channel 9.
- 2) Press **PTT** and speak clearly.
- 3) If there is no response, select an active channel and ask that party to relay your emergency broadcast on Channel 9.

***All channels except Channel 9 may be used for normal communication. The FCC reserves Channel 9 for emergencies involving the immediate safety of individuals or protection of property. Use Channel 9 to render assistance to a motorist. This is an FCC rule and applies to all CB radio operators.***

## 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.
- Inspect all screws and other mounting hardware.

## 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.uniden.com](http://www.uniden.com) for assistance.

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	1. Turn on the automatic noise limiter. 2. Adjust the squelch level.
Weak transmission	1. Check the antenna, cable and connectors. 2. Check the antenna grounding. 3. Check for corrosion on the connectors.

## **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, dynamic
Input Voltage	13.8 V DC nom. (+ or - ground)
Current Drain	TX full mod., 1.7A
RX	with max. audio output, 1.7A
Size	4-1/2" W x 6-3/4" D x 1-3/8" H
Weight	1 lb. 10 oz.
Antenna Connector	UHF, SO-239
LED 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	0.5µV for 10 dB; (S + N) /N typical (limit 1.0µV)
Selectivity	6 dB @ 7kHz, 70 dB @ 10kHz typical
Image Rejection	80 dB typical
I.F. Frequency	Double Conversion Superheterodyne 1st 10.692 MHz 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 1µV
Audio Output Power	7 watts max. into 8 ohms
Freq. Response	300 to 2000 Hz
Distortion	less than 10% at 4 watts, 1000Hz
Internal Speaker	16 ohms, 5 watts round

*Specifications and features are subject to change without notice.*

# **FCC PART 15 & IC COMPLIANCE INFORMATION**

## **FCC PART 15 COMPLIANCE**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## **FCC 44 CM STATEMENT**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 44cm between the radio and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

## **IC COMPLIANCE**

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

- 1) This device may not cause interference.
- 2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur-recepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes :

- 1) L'appareil ne doit pas produire de brouillage;
- 2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

## IC 44 CM STATEMENT

The device meets the exemption from the routine evaluation limits in section 2.5 of RSS 102 and compliance with RSS-102 RF exposure; users can obtain Canadian information on RF exposure and compliance.

L'appareil répond à l'exemption des limites d'évaluation de routine de la section 2.5 du RSS 102 et est conforme à l'exposition aux RF du RSS-102; les utilisateurs peuvent obtenir des informations canadiennes sur l'exposition aux RF et la conformité.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with a minimum distance of 44 centimeters between the radiator and your body.

Cet émetteur ne doit pas être installé ou utilisé en conjonction avec une autre antenne ou un autre émetteur. Cet équipement doit être installé et utilisé avec une distance minimale de 44 centimètres entre le radiateur et votre corps.

## ONE-YEAR LIMITED WARRANTY

WARRANTOR: UNIDEN AMERICA CORPORATION ("Uniden")

ELEMENTS OF WARRANTY: Uniden warrants, for one year, to the original retail owner, this Uniden 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 Uniden, (C) improperly installed, (D) serviced or repaired by someone other than an authorized Uniden 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 Uniden, 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:

Uniden America Service  
C/O Saddle Creek  
743 Henrietta Creek Rd., Suite 100  
Roanoke, TX 76262