Uniden®

PRO 510XL
Professional
Mobile CB Radio

INTRODUCTION

Welcome to the world of Citizens Band radio communications. Your Uniden PRO510 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

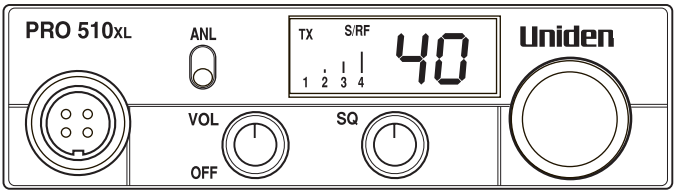
The antenna used for this radio must be properly installed and maintained and must provide a separation distance of at least 16.92 inches (43 cm) from all persons and must not be collocated or operated in conjunction with any other antenna or transmitter. Never transmit if any person is closer than the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

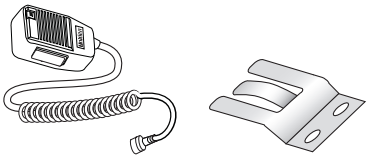
CB license requirement

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.

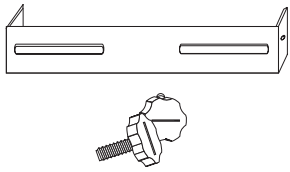
INCLUDED IN YOUR PACKAGE



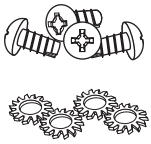
PRO510 XL Mobile radio



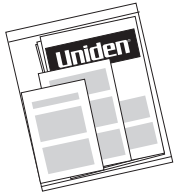
Microphone and hook



Mounting bracket and knobs



Mounting hardware

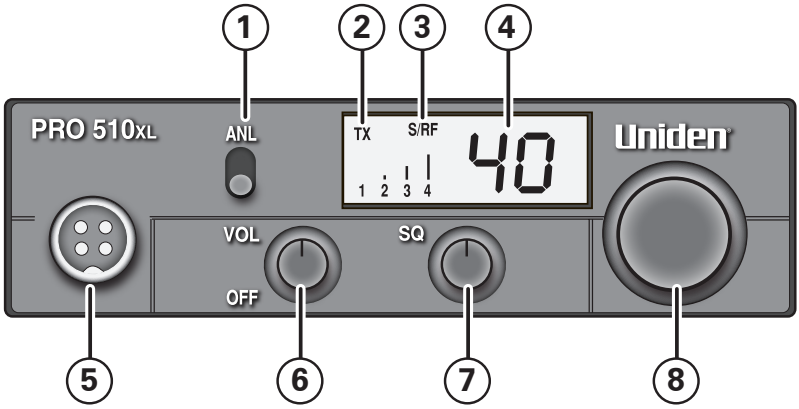


Other printed materials

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

PARTS OF THE RADIO

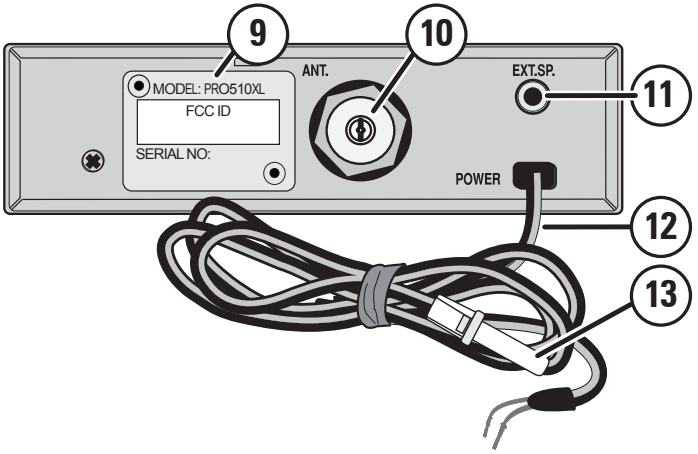
Front



1. **ANL Switch**
   Activates the Automatic Noise Limiter feature, which reduces background noise from the car engine and other sources.
2. **TX LED**
   Indicates when the radio is transmitting.
3. **S/RF (Signal/RF) Meter**
   Shows the strength of the received signal or the RF output.
4. **Channel Indicator**
   Displays the channel currently in use.
5. **Microphone Jack**
   Connects to the included detachable electret microphone.
6. **Volume Control**
   Powers on the radio and adjusts the volume.
7. **Squelch knob**
   Adjusts the level at which the radio squelches or suppresses weak radio signals. To filter out weaker signals and background noise, turn the knob clockwise to increase the squelch level. To decrease the squelch level so you can hear weaker radio signals, turn the knob counter-clockwise.
8. **Channel Selector**
   Selects which channel the radio will transmit or receive on.

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



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

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

11. **External Speaker Jack**
   Connects to a ⅛-inch (3.5 mm) external speaker (sold separately).

12. **12 Volt DC Power Cord**

13. **Fuse casing**

Microphone

14 **Push-to-talk (PTT) button**
   Press and hold the PTT button to transmit on the selected channel. Release the button to listen for a response.

   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 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.
   OR
   For power supplies with a POSITIVE ground, connect the BLACK lead on the radio to the power supply's NEGATIVE (–) pole, and connect the RED lead 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

You will need to purchase an antenna to operate the radio. However, 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.

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.*

OPERATION AND MAINTENANCE

Basic operation

Turning the radio on	Turn the **Volume** knob clockwise until the display backlight comes on.
Turning the radio off	Turn the **Volume** knob counter-clockwise until it clicks and the display backlight turns off.
Selecting a channel	Turn the **Channel** knob clockwise to move up the channel list. Turn it counter-clockwise to move down the channel list.
Changing the volume	Turn the **Volume** knob clockwise to increase the volume; turn it counter-clockwise to decrease the volume.
Transmitting	– Tune the radio to the channel you want to transmit on, and listen to make sure the channel is clear. – Press and hold the **PTT** button. – Hold the microphone about 2 inches away from your mouth and speak in a normal voice. – Release the button to listen for a response.

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.

► Inspect all screws and other mounting hardware.

TROUBLESHOOTING

If your radio is not performing to your expectations, please try these simple steps.

Problem:	Things to try:
Radio won't turn on (no power)	1. Check the radio's power cord and all connections. 2. Check the fuse in the radio's power cord. 3. Check your vehicle's electrical system.
Poor reception	1. Adjust the squelch level. 2. Check the antenna, cable and connectors. 3. Check operation mode of the radio.
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	-30ºC to +50ºC
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. 9 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 than1µV
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 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.

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.