

Uniden®

 **Beacon®**

PC78XL+

Owner's Manual



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SAFETY NOTICE

The antenna used for this radio must be properly installed and maintained and must provide a separation distance of at least 34 cm (13.4 Inches) 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.

This device complies with Industry Canada licence-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.

Changes or modifications to this product or use of accessories not expressly approved by Uniden, or operation of this product in any way other than as provided in the Uniden Owner's Manual could void your authority to operate this product.

A complete Owner's Manual in French can be downloaded from <http://www.uniden.com/>.

L'appareil est conforme aux normes d'Industrie Canada. Son fonctionnement est soumis aux deux conditions suivantes : (1) Ce dispositif ne doit pas causer d'interférences et (2), il doit pouvoir accepter les interférences, incluant celles pouvant nuire à son fonctionnement normal.

Tous les changements apportés à cet appareil, s'ils ne sont pas expressément approuvés par Uniden ou toute utilisation de celui-ci d'une autre manière que celle décrite dans ce guide peut annuler votre autorisation de le faire fonctionner.

Un guide d'utilisation en français peut être téléchargé à l'adresse suivante :

<http://www.uniden.com/>.

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Features, specifications, and availability of optional accessories are all subject to change without notice.

UNPACKING

Carefully unpack your PC78XL+ and check the contents against this list:

- PC78XL+ CB 2-way mobile radio
- Microphone
- Mounting Bracket Kit
- DC Power Cord
- User's Guide
- Part 95 Subpart D (FCC Rules)

If any items are missing or damaged, contact your place of purchase immediately.

DESCRIPTION

Your Uniden PC78XL+ is a high-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).

FCC PART 15 COMPLIANCE

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 certification, 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 recommend by Uniden, may cause violations of the technical regulations in Part 95 of the FCC Rules or in violation of certification requirements in Part 2 of the rules.

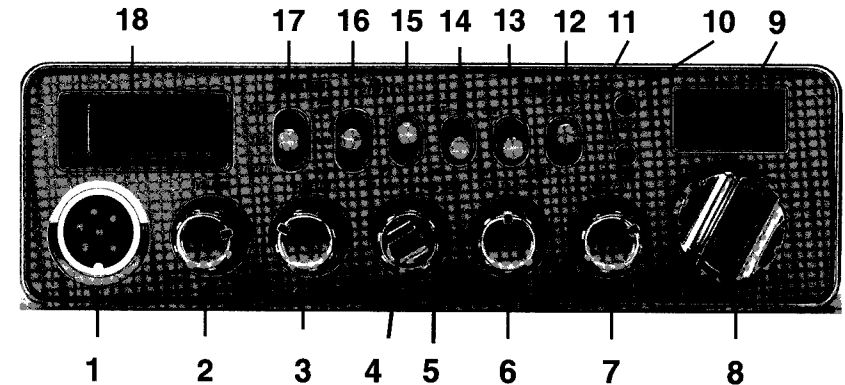
EMERGENCY OPERATION

1. Set the switch to CH9 or turn Channel Selector knob to Channel 9.
2. Press the microphone PTT switch 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. Channel 9 is reserved by the FCC for emergency communication involving the immediate safety of individuals or protection of property. Channel 9 may also be used to render assistance to others.

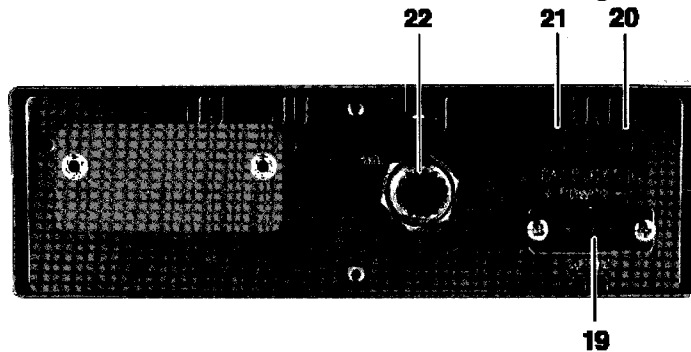
This is an FCC rule and applies to all operators of CB radios.

CONTROLS AND FUNCTIONS



1. **Microphone jack**
The PC78XL+ is preconfigured for Uniden's wireless, noise-canceling microphone technology. Visit www.uniden.com to order Uniden's 6-pin wireless microphone and adapter.
2. **ON OFF - VOLUME:** Turns radio on or off; adjusts speaker volume.
3. **SQUELCH:** Reduces background noise when there is no incoming signal.
4. **RF GAIN** inner knob: Improves reception in strong signal areas.
5. **MIC GAIN** outer knob: Adjusts microphone sensitivity.
6. **DELTA** inner knob: Fine tunes the receiver.
7. **SWR** outer knob: Calibrates the meter for Standing Wave Ratio (SWR) measurements.
8. **Channel** knob: Selects channel.
9. **Channel Display:** Displays current channel selection.
10. **RX/TX LED:** Red-transmitting; green-receiving.
11. **ANT LED:** Indicates a high SWR condition in antenna system.

- Check antenna, cable, and connections.
12. **Dynamic Squelch Control (DSC)** switch: Automatically sets Squelch to optimal level for stronger signals.
 13. **CH9/OFF** switch: Turns Channel 9 on or off.
 14. **BRT/DIM** switch: Adjusts the LED brightness.
 15. **CB/PA** switch: Selects CB (Citizen's Band) or PA (Public Address).
Do not use PA function unless an external speaker is connected.
 16. **NB/ANL** switch: Reduces external noise and interference from vehicle ignition systems.
 17. **S/RF/SWR/CAL** switch: Selects meter function. S/RF - normal; **SWR** and **CAL** are for SWR measurements only. See page 8 for calibration procedures.
 18. Multi-function meter: Measures SWR, RF and S signal strength.



19. **POWER** connector: Connects DC power to transceiver.
20. **EXT. SP.** jack: Connects optional 8-ohm 4-watt speaker to remotely monitor the receiver.
When the external speaker is plugged in, the internal speaker is off.
21. **PA SP.** jack: Connects external 8-ohm, 4-watt speaker.
To prevent acoustic feedback, separate the microphone from the speaker when operating the PA at high output levels.
22. Antenna socket: Connects antenna cable to transceiver.

INSTALLATION

MOBILE STATION INSTALLATION

Plan the location of the transceiver and microphone bracket before beginning installation.

1. Select a location that is convenient for operating the radio, but does not interfere with the driver or passenger.
2. Install bracket with self-tapping screws provided.
3. Connect wiring. (See instructions for Connecting the Power Cords.)
4. Attach the microphone bracket to the side of the radio.
5. Attach radio to bracket.

MOBILE STATION ANTENNA

Because the maximum power output of the transmitter is limited by the FCC, the quality of your antenna is very important. To achieve the maximum transmission distance, we strongly recommend that you install only a high quality antenna. You have just purchased a superior transceiver - don't diminish its performance by installing an inferior antenna.

Only a properly matched antenna system will allow maximum power transfer from the 50 ohm transmission line to the radiating element. Your Uniden dealer is qualified to help you select the proper antenna for your requirements. A whip style antenna may be used for automobile installation.

A short "loaded" whip antenna is easier to install on an automobile. However, the efficiency of the short whip antenna is less than that of a full quarter-wave whip antenna.

MARINE INSTALLATION

Consult your dealer for information regarding marine installation. It is important to adequately ground the system and to prevent electrolysis between the fittings in the hull and the water.

CONNECTING THE POWER CORDS

Uniden recommends connecting the power lead to the Ignition Switch Accessory Terminal. This way, the transceiver is automatically turned off when the ignition switch is turned off.

As an alternative, the power cord may be connected to an available terminal on the fuse block or to a point in the wiring harness. However, take care to prevent a short circuit. If in doubt, contact your vehicle dealer for information.

This transceiver may be installed and used in any 12-volt DC negative ground system vehicle.

GROUND INFORMATION

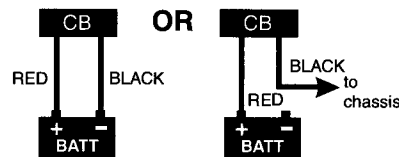
Most newer U.S. and foreign made cars and small trucks use a negative ground system. Some older cars, and some new large trucks, use a positive ground system.

With a negative ground system, the negative (-) battery terminal is usually connected to the vehicle motor block. If you cannot determine the polarity system of your vehicle, contact your vehicle dealer for information.

Negative Ground System

For negative ground systems, connect the red DC power cord from the transceiver to the positive (+) battery terminal or other convenient point.

Then connect the black power cord to the vehicle chassis or negative (-) battery terminal.



USING YOUR PC78XL+

TURN PC78XL+ ON/OFF

Turn the **VOL** knob clockwise until the unit turns on and the display backlight turns on.

Turn the **VOL** knob counter-clockwise to turn the unit off.

CB MODE

Be sure that the power source, antenna, and microphone are properly connected before proceeding.

Basic Settings

1. Turn the unit on. Set the volume to a comfortable level.
2. Set switch to **CB**.
3. Turn the **CH** knob to select a CB channel.
4. Set noise limitations switch to **NB/ANL**.
5. Adjust squelch.
 - Adjust **SQ** knob fully clockwise so only strong signals can get through.
 - Adjust **SQ** knob fully counter-clockwise until you hear a hiss. Everything gets through - noise, weak signals, and strong signals.
 - Slowly adjust **SQ** knob back clockwise until the hiss stops. Only clearer signals get through.

Set SQUELCH only when the radio is not receiving a strong signal.

6. Adjust **RF GAIN** knob set RF Gain sensitivity.
7. Adjust **DELTA** knob to reduce or eliminate adjacent channel interference.
8. Set meter switch to S/RF.

PA MODE

Using the PA mode requires an optional speaker.

1. Switch to **PA**.
2. Press and hold **PTT** to speak.

3. Release when finished.

To prevent acoustic feedback, separate the microphone from the speaker when operating the PA at high output levels.

If you are in PA mode but not pressing **PTT**, the radio receives CB transmissions and transmits them through the PA speaker. You cannot respond to the transmission.

TO TRANSMIT

Perform a voltage Standing Wave Ratio (SWR) measurement prior to using the transmitter. An SWR ratio in excess of 2:1 may damage the transmitter.

Be sure to read and understand Part 95, FCC Rules and Regulations before operating your transmitter.

1. Select a channel.
2. Adjust **MIC GAIN**.
3. When the channel is clear, press the microphone **PTT** and speak.

MULTI-FUNCTION METER

SWR Meter: Measures the standing wave ratio (SWR) of the antenna. Use this meter to check the antenna system or to adjust your antenna to the proper length.

To Measure SWR:

1. Set the meter switch to **CAL**.
2. Press and hold microphone **PTT** switch (Transmit).
3. Calibrate meter with **SWR** knob by adjusting the needle to the ▼ mark.
4. Move the meter switch to the SWR position while pressing the microphone **PTT** switch.
5. Release the **PTT** switch.

A reading following two is acceptable. Higher readings indicate a problem in the antenna system. Problems may be caused by humidity, vibration, or corrosion. Check both ends of the coaxial cable connector. Also check for damage to the cable or antenna.

RF Meter: Measures RF Output Power for transmitter. To use, set the meter switch at **S/RF**. Press microphone **PTT** switch to read transmitting power.

S-Meter: Measures incoming signal strength. To use, set the meter switch at **S/RF**. The meter swings to indicate signal strength.

i.e. S 3, S 5, S 7 ...

PREVENTIVE MAINTENANCE

Every six months:

1. Check the Standing Wave Ratio (SWR).
2. Be sure all electrical connections are tight.
3. Inspect antenna coaxial cable for wear or breaks in shielding.
4. Be sure all screws and mounting hardware are tight.

MAINTENANCE

The PC78XL+ is designed to give you years of trouble-free service. There are no user-serviceable parts inside. Except for the fuse in the DC power cord, no maintenance is required.

To replace a blown fuse:

1. Press ends of the fuse holder together. Twist to open.
2. Carefully separate the two pieces.
3. Remove the fuse and inspect. If blown, replace with the same type fuse. Use only the fuse specified for your PC78XL+. Failure to do so may void your warranty.

TROUBLESHOOTING

In the event of system malfunction, perform the following procedures:

Unit does not power up	Check the ignition key position. Check power cord connections. Check fuse. Check vehicle electrical system.
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No reception	Check microphone connection. Set CB/PA to CB . Check VOL and SQ . Check antenna. Check antenna connection. Adjust RF Gain .
Poor Reception	Check VOL and SQ . Be sure antenna SWR is normal. Adjust RF Gain .
No Transmission	Set CB/PA switch to CB . Check microphone connection. Adjust MIC Gain .
Low Transmission	Be sure antenna SWR is normal. Adjust MIC Gain .
Calibration does not move the meter needle to the left side	Adjust the antenna height. Check all antenna connections.

If you do not get satisfactory results after performing these checks, call the Uniden Customer Service Center at 1-800-297-1023, 8:00 a.m. to 5:00 p.m. CST, Monday through Friday.

SERVICING YOUR TRANSCEIVER

It is the user's responsibility to see that this radio is operating at all times in accordance with the FCC Citizens Radio Service regulations. We highly recommend that you consult a qualified radio/telephone technician for servicing and aligning this CB radio product.

When ordering parts, be sure to specify the correct model number and serial number of the unit.

SPECIFICATIONS

GENERAL

Channel:	40
CB Frequency Range:	26.965 - 27.405 MHz
Frequency Control:	Phase Locked Loop (PLL) synthesizer
Frequency Tolerance:	±0.002%
Operating Temperature:	CB: -22°F to 140°F (-30°C to 60°C) DSC On: 14°F to 140°F (-10°C to 60°C)

Microphone:	Plug-in type; 600 ohms dynamic
Input :	13.8VDC
Current Drain:	TX: AM Full Modulation: 2.2A (max) RX: Squelched, 0.4 A; with maximum audio output, 1.2A (nominal)
Size (W x D x H):	7-9/32 in. x 8-57/64 in. x 2-13/64 in. (without knobs and jacks)
Weight:	4 lb, 3 oz with microphone
Antenna Connector:	UHF, SQ-239
Meter:	Illuminated: indicates relative power output and received signal strength SWR.
Accessories:	DC Power Cord Microphone Microphone Hanger Mounting Bracket

TRANSMITTER

Power Output:	4 watts
Modulation:	High- and Low-Level, Class B amplitude modulation
Frequency Response:	300 - 3000 Hz
Output Impedance:	50 ohm, unbalanced

RECEIVER

Sensitivity at 10 dB (S+N)/N:	<1 µV for 10 dB, (S+N)/N
Selectivity:	6 dB @ 7 kHz; 60 dB @ 10 kHz
Image Rejection:	80 dB typical
Adjacent-CH Rejection:	60 dB typical
IF Frequencies: Double Conversion:	1st: 10,695 MHz 2nd: 455 kHz
Automatic Gain Control:	Less than 10 dB change in audio output for inputs from 10 to 50,000 µV.
RF Gain Control:	Adjustable for optimum signal reception
Delta Tune Range:	± 1.5kHz, continuously adjustable
Noise Blanker:	RF type
Squelch:	Adjustable; threshold <1 µV
Audio Output Power:	4 Watts
Frequency Response:	300 to 3000 Hz
Distortion:	Less than 7% at 3 Watts, 1000 Hz

Internal Speaker:	16 oms, round
External Speaker (not supplied):	8 ohms; disables internal speaker when connected
PA SYSTEM	
Power Output:	4 Watts into external speaker
External Speaker for PA Speaker (not supplied):	8 ohms when CB/PA switch in in PA. The PA also monitors the receiver; separate jack provided.

Specifications shown are typical and subject to change without notice.

RADIO CODE DEFINITIONS

10-CODES

The following list contains common "10-Codes" used by CB radio operators for faster communication and better understanding.

10-1	Received poorly	10-34	Trouble at this station
10-2	Receiving well	10-35	Confidential information
10-3	Stop transmitting	10-36	Correct time is
10-4	OK, message received	10-37	Wrecker needed at
10-5	Relay message	10-38	Ambulance needed at
10-6	Busy, stand by	10-39	Your message is delivered
10-7	Out of service, leaving air	10-41	Please turn to channel
10-8	In service, subject to call	10-42	Traffic accident at
10-9	Repeat message	10-43	Traffic tie up at
10-10	Transmission completed, standing by	10-44	I have a message for you
10-11	Talking too rapidly	10-45	All units within range please report
10-12	Visitors present	10-50	Break channel
10-13	Advise Weather/ Road conditions	10-60	What is next message number
10-16	Make pickup at	10-62	Unable to copy, use phone
10-17	Urgent business	10-63	Net directed to

10-18	Anything for us?	10-64	Net clear
10-19	Nothing for you, return to base	10-65	Awaiting your next message/assignment
10-20	My location is	10-67	All units comply
10-21	Call by telephone	10-70	Fire at
10-22	Report in person to	10-71	Proceed with transmission in sequence
10-23	Stand by	10-77	Negative contact
10-24	Completed last assignment	10-81	Reserve hotel room for
10-25	Can you contact	10-82	Reserve room for
10-26	Disregard last information	10-84	My telephone number is
10-27	I am moving to channel	10-85	My address is
10-28	Identify your station	10-91	Talk closer to microphone
10-29	Time is up for contact	10-93	Check my frequency on this channel
10-30	Does not conform to FCC rules	10-94	Please give me a long count
10-32	I will give you a radio check	10-99	Mission completed, all units secure
10-33	EMERGENCY TRAFFIC	10-200	Police needed at

If you do not get satisfactory results after performing the above checks, call the Uniden Customer Service Center at 1-800-297-1023, 8:00 a.m. to 5:00 p.m. CST, Monday through Friday.

ONE-YEAR EXTENDED WARRANTY

Keep your receipt! Evidence of original purchase is required for warranty service.

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 one year 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 Corporation
C/O Saddle Creek
743 Henrietta Creek Road, Suite 100
Roanoke, TX 76262

(800) 297-1023, 8 a.m. to 5 p.m., Central, Monday through Friday