



clearw<sup>ire</sup>

## pc card user's guide

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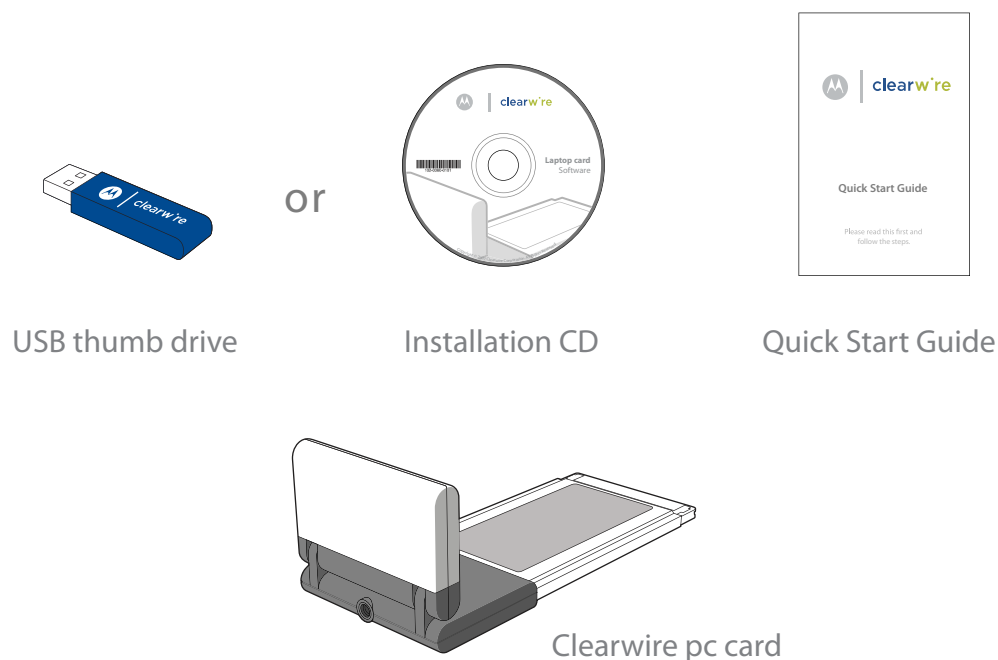


# Welcome

This document describes how to install and use your Clearwire pc card to obtain wireless high-speed Internet access. You can plug the Clearwire pc card into any laptop computer with a side access cardbus slot.

The Clearwire pc card contains an internal antenna that it uses to connect with base stations. Once a connection is established between the Clearwire pc card and a base station you can access the Clearwire network.

## Before you begin



**Figure 1** Clearwire pc card package contents

Table 1 lists the standard contents in your Clearwire pc card package.

**Table 1** Clearwire pc card package components

Component	Part number
Clearwire pc card	900-0512-0903
* Installation CD	110-0512-0903
Quick Start Guide	102-0512-0903

\* USB thumb drive may be included

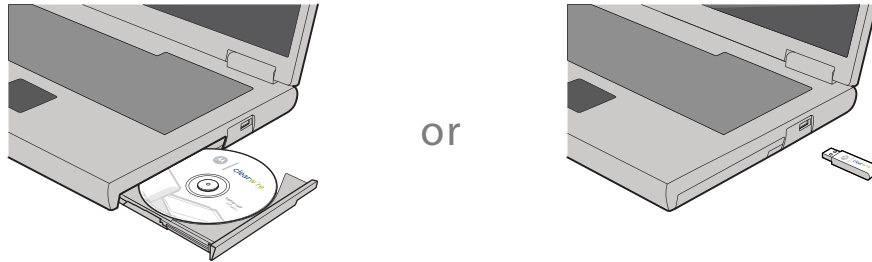
## Installing the Clearwire pc card driver

**\*Do not insert your pc card until after you install the software**

Before using the Clearwire pc card for the first time, you must install the software included with your card.

1 Insert the installation CD or USB drive into laptop PC.

The installation program automatically runs.



**Figure 1.5** Insert the installation CD or USB drive into laptop PC

If the installation program does not automatically run:

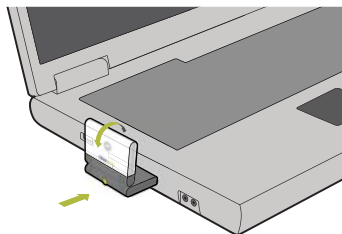
- From the **Start** menu, select **Run**.
- When the Run dialog box opens, type X:\Setup where X: is your laptop PC's CD-ROM or USB drives.
- Click **OK**.

2 Follow the on screen instructions to complete the installation.

## Plugging in the Clearwire pc card

**\*Do not insert your pc card until after you install the software**

1 After powering on your laptop, slide the pc card into the slot on your laptop.

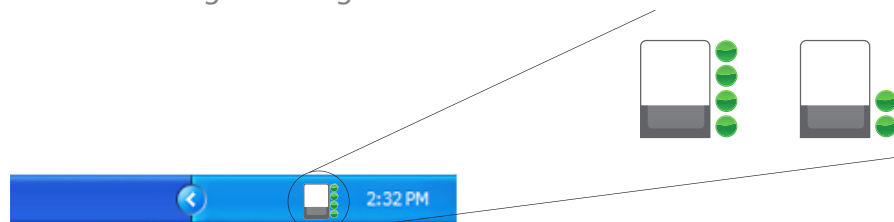


**Figure 2** Plugging pc card into laptop computer

2 The pc card detects the network.

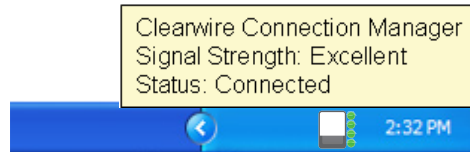
You can discover the connection status of your pc card in the following ways:

- The icons displayed in your laptop's system tray vary depending on the operating state of the pc card and the signal strength it detects.



**Figure 3** System tray icons: connected/signal strength icons

- You can see more detailed status of the Clearwire pc card by rolling your mouse over the system tray icon. The status tip box appears (Figure 4).



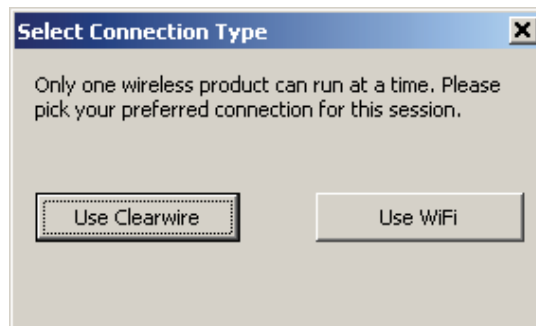
**Figure 4** Status tip box

- 3 To obtain the best signal, follow the process described in the section "Optimizing the signal".

## Choose between your Clearwire pc card and WiFi

The Clearwire pc card cannot run simultaneously with WiFi on your laptop PC. The connection manager software that you installed will manage turning WiFi on and off as you use the Clearwire pc card.

- 1 Plug your Clearwire pc card into your laptop PC. The following dialog box will appear on your screen:

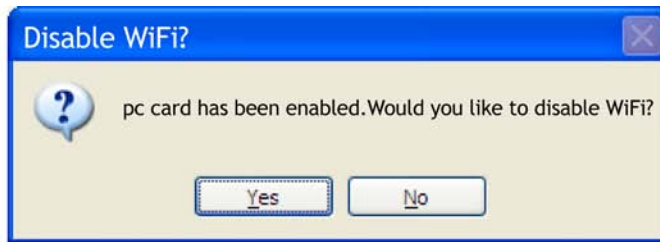


**Figure 5** Select Connection Type: Use Clearwire or Use Wifi window

- 2 Select the connection type that you want to use
  - If you want to connect to the network using the pc card, click **Use Clearwire**. This will disable your WiFi connection.
  - If you want to connect to the WiFi network, click **Use WiFi**. This will disable your Clearwire pc card.

3 Confirm your selection.

a. If you select "Use Clearwire" - the following dialog box will appear.



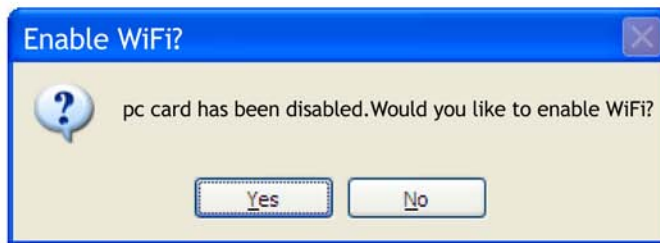
**Figure 6** pc card enabled: Disable WiFi window

If you select Yes, the pc card will become active and WiFi network will be disabled.

**Note:** when you remove your Clearwire pc card, you will be asked if you want to turn on WiFi again.

If you select No, the WiFi network will remain active and the pc card will not be enabled.

b. If you select "Use WiFi" - the following dialog box will appear:



**Figure 7** pc card disabled: Enable WiFi window

If you select Yes, the pc card will be disabled and the WiFi network will be enabled.

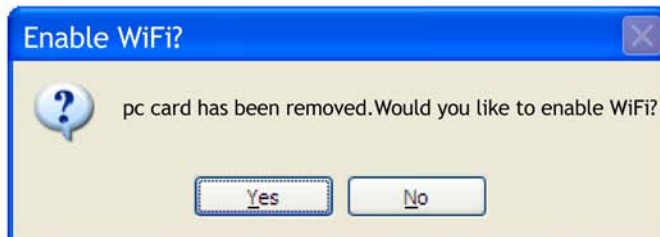
If you select No, the WiFi network will be disabled and the pc card will be enabled.

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4 Removing your pc card

If you remove the pc card from the computer, a dialog box appears, asking if you want to enable a WiFi connection.

b. If you select "Use WiFi" the following dialog box will appear:



**Figure 8** pc card removed: Enable WiFi window

## Managing your Clearwire pc card connection

You may want to disable the pc card connection to use your WiFi network.  
To enable or disable the pc card connection:

- 1 Right click on the System Tray Connection icon.
- 2 Select one of the following depending on your state:
  - **Enable** -- To use the pc card to connect to the Clearwire network.
  - **Disable** -- To disable the pc card connection.

**Note:** To enable your Wi-Fi connection manually, use the Windows control panel.

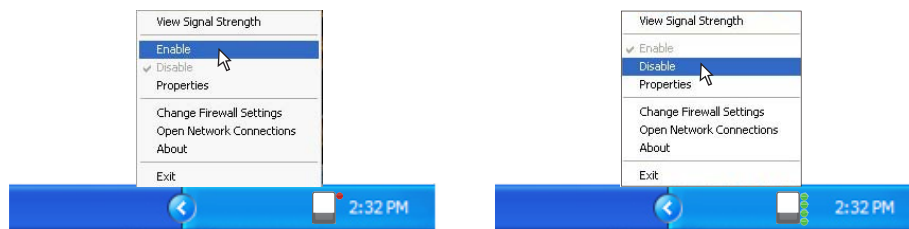


Figure 9 Enable or Disable pc card using the System Tray icon menu

## Finding signal

When your pc card is enabled, it will go out to the network to find a signal from a near by base station antenna. You can monitor its progress from the Signal Strength window.

- 1 Open the Signal Strength window:  
Click on the System Tray Connection icon.



- 2 View the status of your pc card





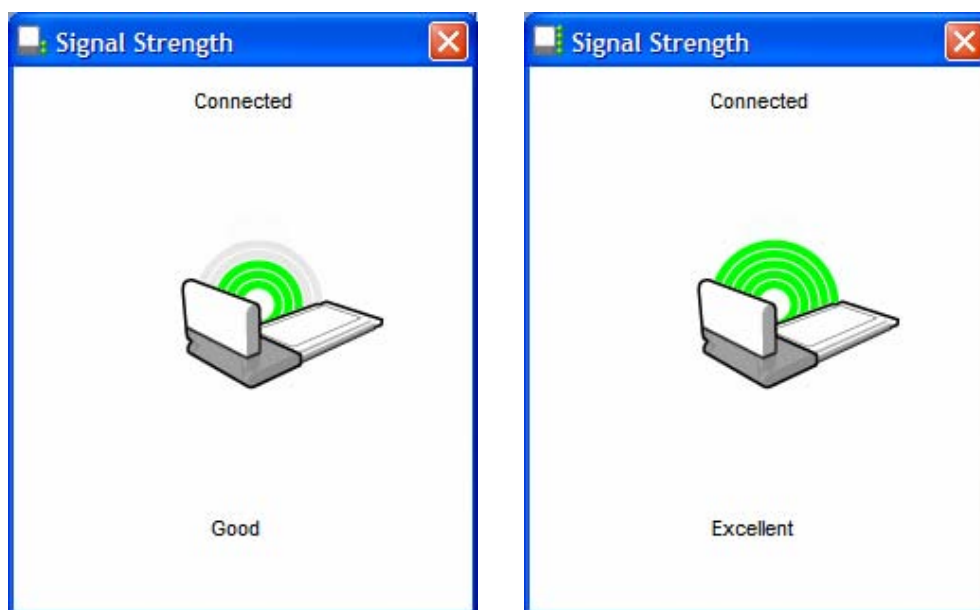
## Optimizing the signal

The Signal Strength window is a graphic tool that will help you optimize the pc card's connection to the Clearwire network.

- 1 Open the Signal Strength window:  
Click on the System Tray Connection icon.



The Signal Strength window will open. The number of arcs displayed will tell you the quality of the signal that your pc card is receiving.



**Figure 10** Signal Strength window

- 2 To obtain a stronger connection, try to position your laptop in different work areas. If your signal is poor, you should install the Clearwire External Antenna for your pc card. See the Quick Start Guide for that antenna for more information on how to use it.

# Unplugging your Clearwire pc card

Unplug your Clearwire pc card safely by using Safely Remove Hardware system tray icon before unplugging the pc card from your computer.

- 1 Double click the Safely Remove Hardware system tray icon.



- 2 In the hardware devices list, select the Expedience Wireless Broadband Non-Line-Of-Sight (NLOS) and click **Stop**

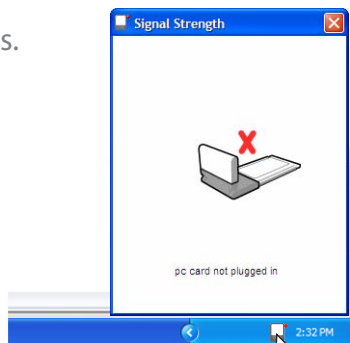


- 3 In the dialog box that appears, confirm your choice to stop the modem.



- 4 Safely remove the pc card from your computer.

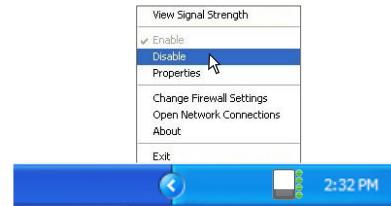
- 5 The Signal Strength window will display the updated status.



## Disabling your Clearwire pc card

You may want to disable the pc card connection to use your WiFi network:  
To disable the pc card connection:

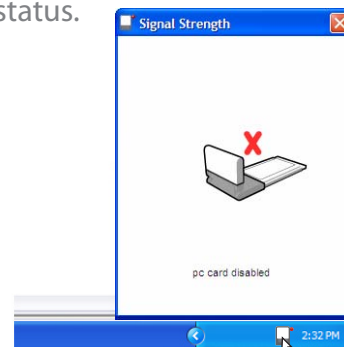
- 1 Right click on the System Tray Connection icon and select **Disable**.



- 2 You will be prompted if you want to turn on the WiFi Connection.  
Select whether you would like WiFi to be turned on or not.



- 3 The Signal Strength window will display the updated status.



**Note:** To enable your Wi-Fi connection manually, use the Windows control panel.

## Uninstalling the Clearwire pc card

To uninstall the Clearwire pc card, go to the Start menu and select All Programs, Clearwire, Clearwire Connection Manager, Uninstall. This removes the Connection Manager and the driver software from your laptop PC.

## Disclaimer

Statements included in this manual indicating support provided by Motorola are subject to changes at any time. Motorola reserves the right to make changes to this manual.



## Declaration of Conformity

Per FCC CFR 47 Part 2 Section 2.1077(a)

Responsible Party Name: Motorola, Inc.

Address: 2900 W. Cty. Rd. 42, Burnsville, MN 55337

USA Phone Number: 1-952-929-4008

Hereby declares that the product:

Product Name: PCC-2510

Model Number: 900-0512-xxxx

Conforms to the following regulations:

FCC Part 15, subpart B, section 15.107(a), 15.107(d) and section 15.109(a)

### Class B Digital Device

As a personal computer peripheral, 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.

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.

## Regulatory Requirements

The Federal Communications Commission (FCC) requires application for certification of digital devices in accordance with CFR Title 47, Part 15 and Part 27. This includes Electromagnetic Energy Exposure (EME) testing. As the PCC-2510 is not a stand-alone modem but is a PC card, the PCC-2510 cannot be tested by itself for EME certification and was tested while inserted in a laptop computer.

Modification of this device may void the user's authority to operate this equipment.

When using the PCC-2510 product, other wireless networking devices contained within the laptop computer must be disabled. For example, most modern laptop computers contain wireless networking functions that are integrated into the computer which utilize a Wi-Fi or WLAN protocol product such as 802.11a@4.9GHz and 802.11b/g@2.4GHz.

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.

**NOTE:** The PCC-2510 was approved by the United States Federal Communications Commission (FCC) for use with the integral antenna and optional external accessory antenna which is available from your service provider.

**NOTE:** Safety and General Information

IMPORTANT INFORMATION ON SAFE AND EFFICIENT OPERATION.

READ THIS INFORMATION BEFORE USING YOUR MOTOROLA PCC-2510.

### RF Operational Characteristics

Your Motorola product contains a radio frequency transmitter to convey the information you wish to send as well as occasional automatic signals used to sustain connection to the wireless network, and a receiver which enables you to receive communication and connection information from the network.

### Antenna Care

Use only the supplied or an approved replacement antenna. Unauthorized antennas, modifications, or attachments could damage the radio product and may violate FCC regulations. When using any approved accessory antenna, position it at least eight inches (20cm) from any part of any person.

DO NOT hold the antenna when the radio product is "IN USE". Holding the antenna affects communication quality and may cause the product to operate at a higher power level than needed.

## Product Operation and EME Exposure

Your Motorola product is designed to comply with the following national and international standards and guidelines regarding exposure of human beings to radio frequency electromagnetic energy (EME):

- United States Federal Communications Commission, Code of Federal Regulations; 47 CFR part 2 sub-part J.
- American National Standards Institute (ANSI) / Institute of Electrical and Electronics Engineers (IEEE). C95. 1-1992.
- Institute of Electrical and Electronics Engineers (IEEE). C95. 1-1999 Edition.
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998.
- Ministry of Health (Canada). Safety Code 6. Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz, 1999.
- Australian Communications Authority Radiocommunications (Electromagnetic Radiation - Human Exposure) Standard 2003.
- ANATEL, Brasil Regulatory Authority, Resolution 303 (July 2, 2002) "Regulation of the limitation of exposure to electrical, magnetic, and electromagnetic fields in the radio frequency range between 9 kHz and 300 GHz." "Attachment to Resolution 303 from July 2, 2002."

The PCC-2510 has been tested for compliance with FCC RF exposure limits in laptop computer configurations with side PCMCIA slots, and can be used in laptop computers with substantially similar physical dimensions, construction, and electrical and RF characteristics. FCC ID: PHX-PCC2510 MEETS THE GOVERNMENT'S REQUIREMENTS FOR EXPOSURE TO RADIO WAVES.

Your PCC-2510 is a radio transmitter and receiver. It is designed and manufactured not to exceed the emission limits for exposure to radiofrequency (RF) energy set by the Federal Communications Commission of the U.S. Government. These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health.

The exposure standard for the PCC-2510 employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6W/kg.(1) Tests for SAR are conducted using standard operating positions reviewed by the FCC with the PCC-2510 transmitting at its highest certified power level in all tested frequency bands. Although the SAR is determined at the highest certified power level, the actual SAR level of the PCC-2510 while operating can be well below the maximum value. This is because the PCC-2510 is designed to operate at multiple power levels so as to use only the power required to reach the network.

# Electro magnetic interference/compatibility

## Facilities

To avoid electromagnetic interference and/or compatibility conflicts, turn off your PCC-2510 immediately in any facility where posted notices instruct you to do so. Hospitals or health care facilities may be using equipment that is sensitive to external RF energy.

## Aircraft

When instructed to do so, turn off your PCC-2510 when on board an aircraft. Any use of a PCC-2510 must be in accordance with applicable regulations per airline crew instructions.

## Medical Devices

### Pacemakers

The Advanced Medical Technology Association (AdvaMed) recommends that a minimum separation of 6 inches (15 cm) be maintained between a PCC-2510 and a pacemaker. These recommendations are consistent with those of the U.S. Food and Drug Administration.

Persons with pacemakers should:

- ALWAYS keep the PCC-2510 more than 6 inches (15 cm) from their pacemaker when the PCC-2510 is turned ON.
- Turn the PCC-2510 OFF immediately if you have any reason to suspect that interference is taking place.

### Hearing Aids

Some digital wireless modem products may interfere with some hearing aids. In the event of such interference, you may want to consult your hearing aid manufacturer to discuss alternatives.

### Other Medical Devices

If you use any other personal medical device, consult the manufacturer of your device to determine if it is adequately shielded from RF energy. Your physician may be able to assist you in obtaining this information.

## Operational cautions

### Cleaning and Drying Considerations

This product is not water proof, and exposing the unit to liquids may result in permanent damage to the unit. If your PCC-2510 interior gets wet, do not try to accelerate drying with the use of an oven or a dryer as this will damage the PCC-2510 and void the warranty. Instead, do the following:

- 1 Immediately power off the PCC-2510.
- 2 Shake excess liquid from PCC-2510.
- 3 Place the PCC-2510 in an area that is at room temperature and has good air flow.
- 4 Let the PCC-2510 dry for 72 hours before powering on again.

If the PCC-2510 does not work after following the steps listed above, contact your dealer for servicing information.

Clean the external surfaces of the PCC-2510 with a damp cloth, using a mild solution of dishwashing detergent and water. Some household cleaners may contain chemicals that could seriously damage the PCC-2510. Avoid the use of any petroleum-based solvent cleaners. Also, avoid applying liquids directly on the PCC-2510.

Nearly every electronic device is susceptible to electromagnetic interference (EMI) if inadequately shielded, designed or otherwise configured for electromagnetic compatibility.

## Operational warnings

### For Vehicle With Air Bags

Do not place a PCC-2510 in the area over an air bag or in the air bag deployment area. Air bags inflate with great force. If a PCC-2510 is placed in the air bag deployment area and the air bag inflates, the PCC-2510 may be propelled with great force and cause serious injury to occupants of the vehicle.

### Potentially Explosive Atmospheres

Turn off your PCC-2510 prior to entering any area with a potentially explosive atmosphere. Sparks in a potentially explosive atmosphere can cause an explosion or fire resulting in bodily injury or even death. The areas with potentially explosive atmospheres referred to above include fueling areas such as below decks on boats, fuel or chemical transfer or storage facilities, and areas where the air contains chemicals or particles such as grain, dust or metal powders, and any other area where you would normally be advised to turn off your vehicle engine. Areas with potentially explosive atmospheres are often but not always posted.

### Blasting Caps and Blasting Areas

To avoid possible interference with blasting operations, turn off your PCC-2510 when you are near electrical blasting caps, in a blasting area, or in areas posted: "Turn off two-way radio." Obey all signs and instructions.



## Equipment and Installation Warranty

Clearwire warrants to you that the Equipment and its Installation by Clearwire will be substantially free from material defects in material and workmanship, under normal use in compliance with Clearwire's instructions, for a period of one (1) year from the date you receive the Equipment or installation ("Limited Warranty"). This Limited Warranty excludes any defects resulting from abuse, misuse, neglect, theft, vandalism, fire, unusual physical or electrical stress, water, extremes of temperature, an act of God, your failure to comply with Clearwire's policies or other instructions provided by Clearwire, actual or attempted alteration of or additions to the Equipment not approved by Clearwire, or any other cause beyond the reasonable control of Clearwire, all as determined by Clearwire (collectively, "Excluded Causes"). Repair or replacement, in Clearwire's discretion, of the Equipment and reperformance of the installation is Clearwire's only responsibility, and your exclusive remedy, for breach of any warranty regarding the Equipment or the installation, as applicable. This Limited Warranty is personal to you, and will terminate immediately upon the sale or transfer of the Equipment or expiration or termination of this Agreement.

## Patent and software provisions

Motorola will defend, at its own expense, any suit brought against the end user purchaser to the extent that it is based on a claim that the Product or its parts infringe a United States patent, and Motorola will pay those costs and damages finally awarded against the end user purchaser in any such suit which are attributable to any such claim, but such defense and payments are conditioned on the following:

- 1 that Motorola will be notified promptly in writing by such purchaser of any notice of such claim;
- 2 that Motorola will have sole control of the defense of such suit and all negotiations for its settlement or compromise;
- and
- 3 should the Product or its parts become, or in Motorola's opinion be likely to become, the subject of a claim of infringement of a United States patent, that such purchaser will permit Motorola, at its option and expense, either to procure for such purchaser the right to continue using the Product or its parts or to replace or modify the same so that it becomes non-infringing or to grant such purchaser a credit for the Product or its parts as depreciated and accept its return. The depreciation will be an equal amount per year over the lifetime of the Product or its parts as established by Motorola.

Motorola will have no liability with respect to any claim of patent infringement which is based upon the combination of the Product or its parts furnished hereunder with software, apparatus or devices not furnished by Motorola, nor will Motorola have any liability for the use of ancillary equipment or software not furnished by Motorola which is attached to or used in connection with the Product. The foregoing states the entire liability of Motorola with respect to infringement of patents by the Product or any its parts thereof.

Laws in the United States and other countries preserve for Motorola certain exclusive rights for copyrighted Motorola software such as the exclusive rights to reproduce in copies and distribute copies of such Motorola software. Motorola software may be used in only the Product in which the software was originally embodied and such software in such Product may not be replaced, copied, distributed, modified in any way, or used to produce any derivative thereof. No other use including, without limitation, alteration, modification, reproduction, distribution, or reverse engineering of such Motorola software or exercise of rights in such Motorola software is permitted. No license is granted by implication, estoppel or otherwise under Motorola patent rights or copyrights

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For more information:  
Go to [www.clearwire.com](http://www.clearwire.com)  
or please contact Customer Care  
at 1 888 Clearwire