

# Amplifier Installation Guide



## SIGNALBOOST™ iBooster™

### Dual-Band Wireless Cellular / PCS Amplifier with Built-in Antenna for the iPhone\*

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**⚠ Warning:** This manual contains important safety and operating information. Please read and follow the instructions in this manual. Failure to do so could be hazardous and result in damage to your amplifier.

\*iPhone is a registered trademark of Apple, Inc.

#### 30-Day Money-Back Guarantee

All Wilson Electronics products are protected by Wilson's 30-day money-back guarantee. If, for any reason, the performance of any product is not acceptable, simply return the product directly to the reseller with a dated proof of purchase.

#### 1-Year Warranty

Wilson Electronics amplifiers are warranted for one (1) year against defects in workmanship and / or materials. Warranty cases may be resolved by returning the product directly to the reseller with a dated proof of purchase.

Amplifiers may also be returned directly to the manufacturer at the consumer's expense, with a dated proof of purchase and a Returned Material Authorization (RMA) number supplied by Wilson Electronics. Wilson shall, at its option, either repair or replace the product. Wilson Electronics will pay for delivery of the repaired or replaced product back to the original consumer.

This warranty does not apply to any amplifiers determined by Wilson Electronics to have been subjected to misuse, abuse, neglect, or mishandling that alters or damages physical or electronic properties.

RMA numbers may be obtained by phoning Technical Support at 866-294-1660.

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 this device.

Disclaimer: The information provided by Wilson Electronics, Inc. is believed to be complete and accurate. However, no responsibility is assumed by Wilson Electronics, Inc. for any business or personal losses arising from its use, or for any infringements of patents or other rights of third parties that may result from its use.

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**Installation Instructions for the Following Wilson Amplifier:**

**SIGNALBOOST™ iBooster Amplifier for the iPhone®, both 2G & 3G models**

Part # 805201

Model # 271220

FCC ID: PWO271220SA

IC: 4726A-271220SA

The term "IC" before the radio certification number only signifies that Industry Canada technical specifications were met.

**Inside this Package**



iBooster™ Wireless Amplifier Cradle



Wilson Power Supply PS1



Mini Magnet-mount antenna



iPhone® case adapter



Vehicle Dash Mounting Brackets

**How it Works**

Your new Wilson amplifier has been carefully engineered to significantly improve the performance of your cell phone or cellular data card in mobile and in-building applications. Together with an outside antenna, the amplifier's state-of-the-art technology is designed to increase your signal both on transmit and receive, to and from the cell site, up to 15 times greater than the cell phone alone. This reduces disconnects and dropouts and increase data communication rates needed for both 2G and 3G technologies.

The outside antenna will collect the cell tower signal and send it through the cable to the amplifier. The signal is then boosted and sent through the built-in antenna inside the amplifier which broadcasts to the cell phone. When the cell phone or data card transmits, the signal goes through the inside antenna, is boosted by the amplifier and broadcast back to the cell tower through the outside antenna.

Wilson Electronics manufactures a wide variety of outside antennas to help you customize your amplifier for your specific application. Several are shown below. See your dealer or visit [www.wilsonelectronics.com](http://www.wilsonelectronics.com).

High Gain Magnet-Mount Antenna

Doubles the power over the mini-magnet antenna to your cell site. This antenna is 11" tall.

Ideal for improved range with the iBooster.



Trucker Antenna

For trucks

Mounts on 3/8" mount.

Ideal for mirror mounting on large trucks.



NMO Mount Antenna

For permanent vehicle roof mount. For professional mounting on cars and pickup trucks.



RV Antenna

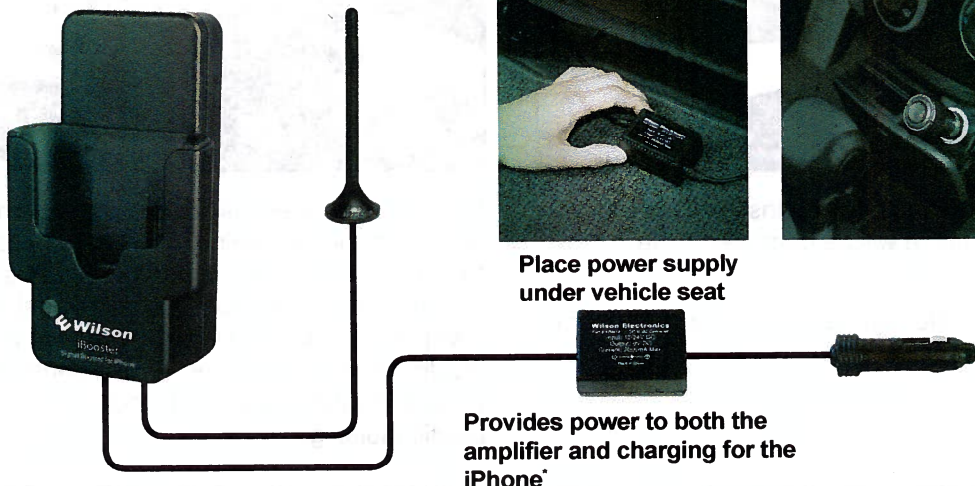
For vehicle roof mount.



### Before Getting Started

This guide will help you properly install Wilson's SIGNALBOOST™ iBooster™ Dual-Band Wireless Cellular/PCS Amplifier. **It is important to read through all of the installation steps for your particular application prior to installing any equipment.** Read through the instructions, visualize where all the equipment will need to be installed and do a soft installation before mounting any equipment. If you do not understand the instructions in full, contact Wilson Technical Support at 866-294-1660.

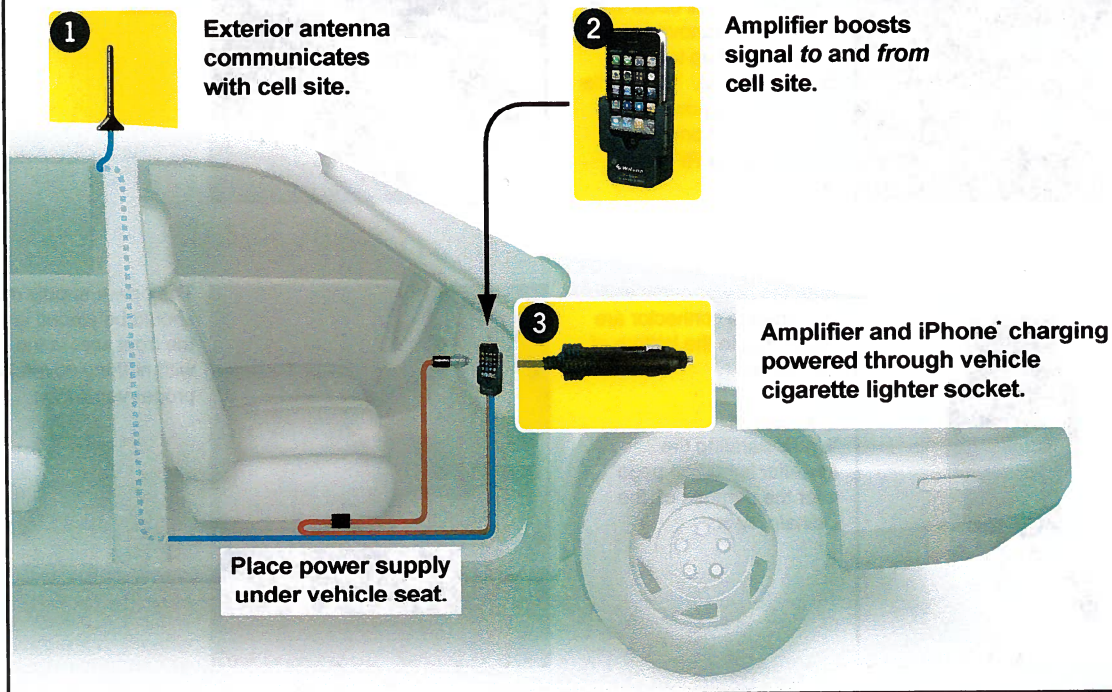
### Installation Diagram



Place power supply under vehicle seat

Provides power to both the amplifier and charging for the iPhone\*

### Vehicle Installation



1 Exterior antenna communicates with cell site.

2 Amplifier boosts signal to and from cell site.

3 Amplifier and iPhone\* charging powered through vehicle cigarette lighter socket.

Place power supply under vehicle seat.

\*iPhone is a registered trademark of Apple, Inc.

### Installing a Wilson Outside Antenna on a Vehicle

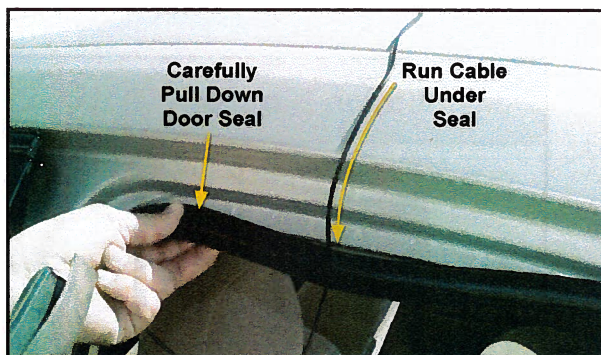
To receive the best cell signal, select a location in the center of the vehicle's roof 12 inches away from any other antennas and free of obstructions but at least 8-12 inches from the rear or side windows or sunroof.

Follow the specific antenna installation instructions included with the outside antenna (sold separately except for certain kits). See back cover for RF safety warning.

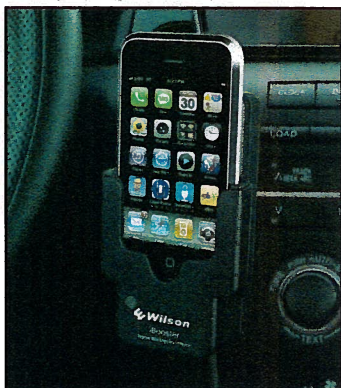


The outside antenna must be installed vertically. Signal performance will be degraded if the antenna is not vertical.

The antenna cable may be run through the door to the amplifier.



For a more professional-looking installation, the antenna cable may be run under the door seal. Carefully pull down the door seal. Run the cable through the seal and push the seal back into place. This prevents constant wear and tear on the cable as the door opens and closes. The antenna cable is small enough to easily tuck under the door seal or plastic molding.



Place the iPhone into the cradle, and make sure it secures into the connector at the bottom. Best performance is obtained with the iPhone in the cradle, but good amplification will occur with the iPhone removed at a distance of up to 2 feet from the cradle. The cradle also provides power to charge the iPhone. See back cover for RF safety warning.



Two different mounting brackets are provided that attach to your vehicle's dash. Choose the appropriate one for your application. Attach the rear of the booster to the bracket.



Both the power cable and the antenna connector are connected to the bottom of the cradle.

See section "Understanding the amplifier lights" on page 4 for the purpose of the indicator light.



The power supply module should be placed under the front seat in the clear with nothing covering it for proper ventilation.

## Powering up the Wilson iBooster™ Amplifier

**Make sure the outside antenna cable is connected before powering up the amplifier.**

Connect the mini-USB plug on the power cable to the amplifier's mini usb port on the iBooster™. Insert the adapter into the cigarette lighter outlet of your vehicle.

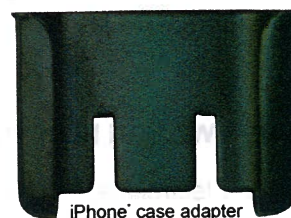
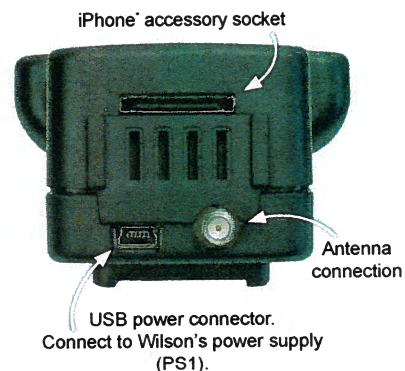
The amplifier may remain on all the time. However, leaving the amplifier on in a vehicle when it is not running can discharge the battery in a day or two.

A good option is to power the amplifier through the ignition switch so that the amplifier is turned on and off with the vehicle. The 12 volt ACC socket on many vehicles is shut off with the ignition key.

Note: The iBooster™ 12V power supply provides charging current to the iPhone®.

**IMPORTANT: Do not power up the amplifier unless the outside antenna cable is attached to amplifier.**

If your iPhone® has an external case, remove the case adapter from the amplifier housing as shown in photo to the right. If you have no case on your iPhone® the case adapter is required for a proper fit.



**Warning:** Use only Wilson adapters for cigarette lighters or AC. adapters.

## Understanding the Amplifier Lights

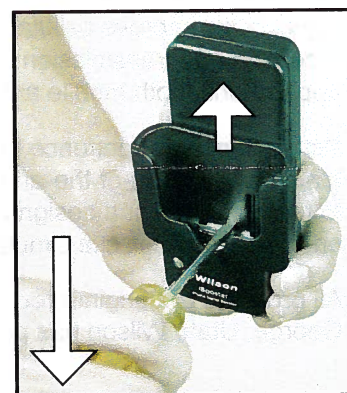
**Separation of inside and outside antennas is very important.** In a vehicle, the metal roof acts as a barrier and helps shield the two antennas from each other, preventing oscillation.

If the light turns red, oscillation is occurring and the amplifier has powered down. The outside roof mounted antenna needs to be moved farther from the amplifier. In a vehicle installation, move the outside antenna on the roof of the car farther to the rear of the car, but at least 8-12 inches from the rear or side windows or sunroof. Remove power from the amplifier and reconnect power - this resets the amplifier.

Oscillation in an amplifier is like having a microphone and a speaker too close together. If the amplifier and outside antenna are too close together oscillation will occur in the amplifier.

If the light is now green, the oscillation has stopped and the amplifier is working. If the red light is still on, move the antenna farther away and repeat the process.

In a vehicle, always use a magnet-mount or roof-mount antenna. Do not use a glass-mount antenna, as oscillation may cause continuous shut-down of the amplifier.



How to remove iPhone® case adapter - pry up gently

## Troubleshooting

### SYMPTOM: Green Light always OFF

- 1) Make sure that the 12 volt power source is supplying power to the iBooster by checking that the switch on the 12 volt power plug is on and the plug's red light is on.
- 2) If the plug is properly inserted with the switch on, but the plug's light doesn't come on, then check the 12 volts from the car socket, and check the fuse in the PS1 plug.

### SYMPTOM: Red Light always ON

- 1) Make sure that the antenna connector is on tightly.
- 2) Place the Outside Antenna on its side (see picture). Reset power by momentarily switching off the power (using the switch on the power plug). The light should now be green.
- 3) Return the outside antenna to its upright position, and move it farther to the rear of the vehicle, but no closer than 8 inches from the rear or side windows. Reset the power by momentarily switching off the power (using the switch on the power plug). Continue moving the antenna and resetting the power until the light becomes green (while maintaining a minimum distance of 8 inches from any of the windows).
- 4) If none of the above corrects the problem, call Wilson Technical Support at 1-866-294-1660.



\*iPhone is a registered trademark of Apple, Inc.

**WARNINGS AND RECOMMENDATIONS**

- Warning:** Do not plug in the DC power supply until the outside antenna cable is attached to the amplifier.
- Warning:** **RF Safety:** The amplifier with its built-in antenna must be installed with a separation of at least 8 inches from all persons and must not be located in conjunction with any other antenna or amplifier.
- Warning:** **RF Safety:** The outside antenna must be installed with a separation of at least 8 inches from any of the vehicle's occupants or nearby persons and must not be located or operating in conjunction with any other antenna or amplifier.

**Separation of inside and outside antennas is very important. In a vehicle, the metal roof acts as a barrier and helps shield the two antennas from each other, preventing oscillation.**

If the vehicle has a sunroof, it is important to keep the outside antenna at least 12 inches from the edge of the sunroof. This prevents the amplifier from oscillating.

**ABOUT WILSON ELECTRONICS**

Wilson Electronics, Inc. has been a leader in the wireless communications industry for nearly 40 years. The company designs and manufactures amplifiers, antennas and related components that significantly improve cellular telephone signal reception and transmission in a wide variety of applications, both mobile and in-building.



With extensive experience in antenna and amplifier research and design, the company's engineering team uses a state-of-the-art testing laboratory, including an anechoic chamber and network analyzers, to fine-tune antenna designs and performance. For its amplifiers, Wilson uses a double-shielded RF enclosure and cell site simulators for compliance testing.

All products are engineered and assembled in the company's 50,000-square-foot headquarters in St. George, Utah. Wilson has product dealers in all 50 states as well as in countries all over the world.

\*iPhone is a registered trademark of Apple, Inc.

**AMPLIFIER CANADIAN SPECIFICATIONS**

		Dual Band 800/1900 MHz Specifications	
Impedance (input/output)		50 ohms	
Frequency		824-894 MHz / 1850-1990 MHz	
*Passband Gain (nominal)	800 MHz uplink	40 dB (typical) / 46 dB (maximum)	
	800 MHz downlink	40 dB (typical) / 49 dB (maximum)	
	1900 MHz uplink	41 dB (typical) / 50 dB (maximum)	
	1900 MHz downlink	41 dB (typical) / 50 dB (maximum)	
*20 dB Bandwidth (nominal)	800 MHz (uplink/downlink)	35 MHz / 45 MHz (maximum)	
	1900 MHz (uplink/downlink)	70 MHz / 87 MHz (maximum)	
Power output for single cell phone (uplink)		800 MHz	1900 MHz
	CDMA	31.4 dBm	30.1 dBm
	GSM	26.9 dBm	26.3 dBm
	EDGE	26.0 dBm	25.1 dBm
Power output for single received channel (downlink)		800 MHz	1900 MHz
	CDMA	5.6 dBm	1.8 dBm
	GSM	0.7 dBm	-2.7 dBm
	EDGE	-2.5 dBm	-6.4 dBm
*Power output for multiple received channels (downlink). The maximum power is reduced by the number of channels:		Maximum Power*	
	Number of channels	800 MHz	1900 MHz
	2	6.7 dBm	0.2 dBm
	3	3.2 dBm	-3.4 dBm
	4	0.7 dBm	-5.9 dBm
	5	-1.3 dBm	-7.8 dBm
Power Requirements		12 V DC (Nominal), 1.2 A	

**NOTES**

1. Nominal gain is the maximum gain at any frequency in the passband.
2. Nominal bandwidth is the difference between two frequencies that are adjacent to the passband where the amplification is 20 dB lower than the passband amplification. One of the frequencies is lower than the passband and the other is higher.
3. The Manufacturer's rated output power of this equipment is for single carrier operation. For situations when multiple carrier signals are present, the rating would have to be reduced by 3.5 dB, especially where the output signal is re-radiated and can cause interference to adjacent band users. This power reduction is to be by means of input power or gain reduction and not by an attenuator at the output of the device.
4. Data is in accordance with IC spec RSS-131. The maximum power for 2 or more simultaneous signals will be reduced by 6 dB for each doubling of the number of signals.

**Wilson® Electronics, Inc.**  
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