

**DIRECT CONNECTION**  
Mobile & In-Building



## Installation Guide

*iDEN High Power*



**DIRECT CONNECTION**  
**iDEN High Power**  
**Smart Technology™**  
**Amplifier**  
**Part# 814004**

FCC ID: PWO8140SD  
IC: 4726A-8140SD

### **Wilson Electronics, Inc.**

3301 E. Deseret Drive, St. George, Utah 84790

For additional technical support go to

[www.wilsonelectronics.com](http://www.wilsonelectronics.com)

Phone: 1-866-294-1660

Fax: 1-435-656-2432

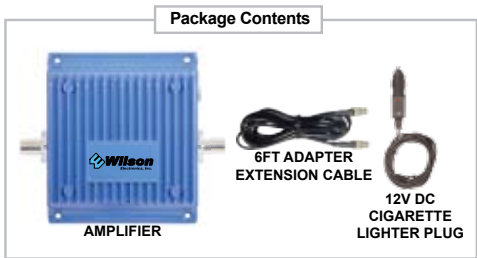
The term "IC:" before the radio certification number only signifies that Industry of Canada technical specifications were met.

## 1. PURPOSE OF THE DIRECT CONNECTION AMPLIFIER

The Direct Connection Bi-directional Amplifier improves cell phone coverage in areas with low signal strength.

## 2. PACKAGE CONTENTS

- 2.1 Bi-directional Direct Connection Amplifier.
- 2.2 DC plug-in power supply with ON/OFF switch.
- 2.3 6ft. adapter extension cable.



## 3. HOW THE DIRECT CONNECTION AMPLIFIER FUNCTIONS

When using the amplifier, the signal is received by the outside antenna from the cell site. The signal is then AMPLIFIED and sent to the cell phone through the adapter (sold separately). When the phone transmits, the signal is sent to the amplifier through the adapter then AMPLIFIED and transmitted to the cell site through the outside antenna.

## 4. AMPLIFIER INSTALLATION (see illustration on pg.4)

### 4.1 Installing the **Wilson Cellular** Antenna

4.1.1 See antenna packaging for model specific instructions.

4.1.2..See Warnings (Section 7)

### 4.2 Installing The Amplifier

4.2.1 Select a suitable location to mount the AMPLIFIER. The amplifier can be mounted to the selected location using screws. (Screws not included.) Mount the AMPLIFIER away from direct sunlight, excessive heat and/ or moisture. The amplifier needs proper ventilation.

4.2.2 Connect the outside antenna to the AMPLIFIER side labeled “OUTSIDE ANTENNA”.

4.2.3 Connect the ADAPTER EXTENSION CABLE to the AMPLIFIER side labeled “CELLULAR PHONE”.

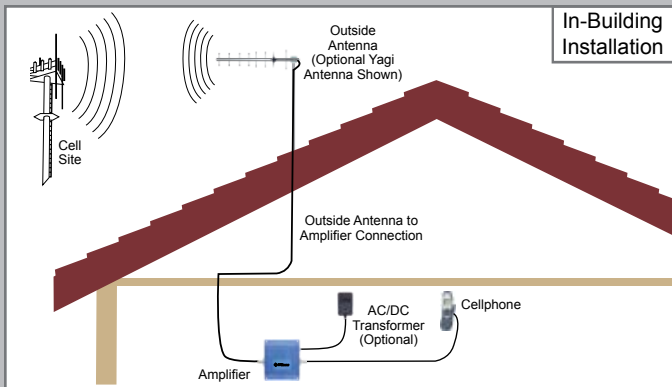
4.2.4 An external antenna adapter is required (sold separately) to connect the AMPLIFIER to the cellphone. External antenna adapters connect directly to the antenna extension cable.

4.2.5 Connect the DC power supply to the AMPLIFIER. Verify that both the OUTSIDE ANTENNA and the ADAPTER EXTENSION CABLE are connected before powering up the AMPLIFIER.

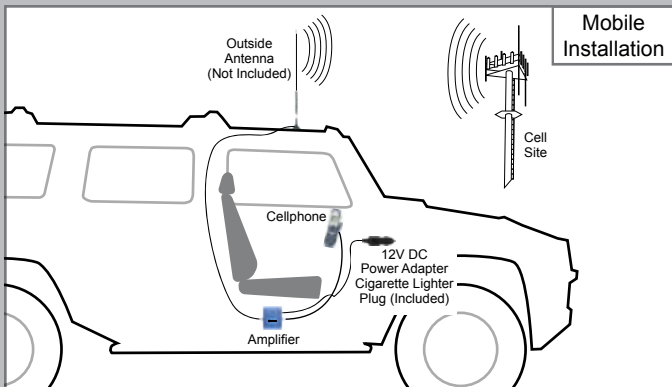
**NOTE:** Visit our website at [www.wilsonelectronics.com](http://www.wilsonelectronics.com) for the latest adapter cross reference chart. If your phone’s adapter is not available from your retailer contact us at 1-866-294-6996 and we will help you locate one in your area. For further assistance contact our technical support Toll-Free at 1-866-294-1660.

**NOTE:** iDEN Antennas are recommended for iDEN Amplifier 814004.

## In-Building Installation



## Mobile Installation



## 5. AMPLIFIER SPECIFICATIONS

<b>Part Number</b>	<b>#814004</b>
<b>Connectors</b>	<b>FME-Male 50 Ohms</b>
<b>Dimensions</b>	<b>5.5x4.3x1.4 inch (14.0x10.8x3.5 cm)</b>
<b>Weight</b>	<b>1.32 Pounds (600 Grams)</b>
<b>Frequency</b>	<b>806-821 MHz Uplink 851-866 MHz Downlink</b>
<b>Gain</b>	<b>Cell Site Controlled</b>
<b>Flatness up/down</b>	<b>+/-2 dB / +/-3 dB</b>
<b>Max RF up/down</b>	<b>+35 dBm / +15 dBm</b>
<b>Noise Figure down</b>	<b>3.5 dB nominal</b>
<b>Isolation</b>	<b>Uplink/Downlink 90 dB</b>
<b>Power Requirements</b>	<b>13.8 V, 1.4 A During Uplink Transmission 50 mA During Downlink Reception</b>

## 6. OPTIONAL ACCESSORIES/ANTENNA OPTIONS

- 6.1 Coax Cable Extensions 50Ω (see chart on pg.7)
- 6.2 Antenna Options (see chart on last page)
- 6.3 N-Female To FME-Female Adapter - Adapts 9913 Coax to the Bi-directional Amplifier.
- 6.4 Lightning Surge Protector (In-Building application)  
**WARNING:** Lightning protection is recommended for all In-Building installations.
- 6.5 Hardwire Power Supply Kit.



## 7. WARNINGS

**WARNING:** Verify that both the outside antenna and adapter extension cable are connected before powering up the AMPLIFIER.

**RF SAFETY WARNING: (IN-VEHICLE ONLY)** The outside antenna must be mounted with a separation distance of at least 24 inches from any of the vehicle occupants or nearby persons. For roof mounted antennas, separation distance from an occupant is the distance to the outside edge of the roof plus the distance from the roof edge to the antenna. For antennas mounted without an intervening metal surface (such as trunk mounted antennas), separation distance is the straight line distance between an occupant and the antenna (measured in a straight line through the rear window for a trunk mounted antenna). The outside antenna must not be located or operating in conjunction with any other antenna or amplifier. Use of this amplifier in mobile applications with antenna gains higher than 5.8 dBi is in violation of FCC regulations for which the offender is fully liable. All Wilson Mobile Antennas are 5.8 dBi or less.

**WARNING: (IN-BUILDING ONLY)** Lightning protection is recommended for all in-building installations.

**RF SAFETY WARNING: (IN-BUILDING ONLY)** When using in-building, the outside antenna must be fixed-mounted on an outdoor permanent structure with a separation of at least 20 feet from all persons during normal operation.

## 8. TECH SUPPORT

If you need further assistance with your installation:

- 1) Call us Toll-Free at 866-294-1660
- 2) E-mail tech support at [tech@wilsonelectronics.com](mailto:tech@wilsonelectronics.com)
- 3) Go to [www.wilsonelectronics.com](http://www.wilsonelectronics.com)

Our Hours of Operation are: 8:00 AM – 4:30 PM (Mountain Time)

## EXTENSION CABLE CHART (RG58U - FME connectors / 9913 - N connectors)

951101	5' Extension Cable RG58U Low Loss Coax	(0.6 db loss)
951102	10' Extension Cable RG58U Low Loss Coax	(1.2 db loss)
951103	15' Extension Cable RG58U Low Loss Coax	(1.8 db loss)
951104	20' Extension Cable RG58U Low Loss Coax	(2.4 db loss) N-Male to FME Female
951108	20' Extension Cable 9913 Equivalent Ultra Low Loss Coax	Only use 9913 Equivalent Low Loss Coax for extensions 20' or longer (0.8 db loss)
951105	30' Extension Cable 9913 Equivalent Ultra Low Loss Coax	(1.2 db loss)
951106	50' Extension Cable 9913 Equivalent Ultra Low Loss Coax	(2.0 db loss)
951117	75' Extension 9913 Equivalent Low Loss Coax	(3.0 db loss)
951107	100' Extension 9913 Equivalent Low Loss Coax	(4.0 db loss)
951113	2' Extension 9913 Equivalent Ultra Low Loss Coax (N-Male to N-Male Ends)	(0.08 db loss) Jumper Coax - Can be used to connect a splitter behind an amplifier.
951110	2' Extension RG58U Low Loss Coax (N-Male to FME Female)	Used with the Yagi antenna to help find the optimum signal strength (for installation purposes only).

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.

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.

Leaving the amplifier on in an unused vehicle for days may drain your battery. This can be avoided by plugging into an ignition switched outlet or by using the small white switch located on the power supply.

The voltage and current into the final amplification stage are:

TX: 13.8 V, 4 A Peak, 1.3 A Average

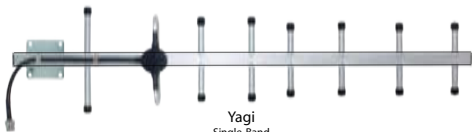
RX: 5 V, 50 mA

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# Outside Antenna Options

For more options visit  
[www.wilsonelectronics.com](http://www.wilsonelectronics.com)



Yagi  
Single-Band  
(For Building Installations Only)



Pictures Are Not To Scale  
Not All Outside Antenna  
Options Are Shown

Questions?  
1-866-294-1660

[www.wilsonelectronics.com](http://www.wilsonelectronics.com)



Mini Magnet  
Dual-Band



Mini Glass  
Dual-Band



Magnet  
Mount  
Dual-Band



NMO  
Mount  
Dual-Band



Glass  
Mount  
Dual-Band



Trucker  
Mirror Mount  
Dual-Band

## 15 DAY MONEY BACK GUARANTEE

All Wilson products  
have a 15 day  
money back  
guarantee with  
Proof of Purchase

## 1 YEAR WARRANTY

The Wilson amplifier is warranted for one year against defects in workmanship and/or materials and will be repaired or replaced, at the discretion of the manufacturer, to the original purchaser with dated proof of purchase or sales receipt.

If you have questions about your amplifier please call technical support call 1-866-294-1660 or E-mail [tech@wilsonelectronics.com](mailto:tech@wilsonelectronics.com)

Most warranty cases can be handled by taking the amplifier and the receipt to the store where it was purchased. If inconvenient, the amplifier and a copy of the receipt, may be sent to the factory, at purchasers expense, where it may be repaired or replaced and returned shipping paid. Warranty does not cover damages caused by abuse, misuse, and negligence.