

# User's Guide

## RF Signal Detector Model #2E7501



### Contents:

Purpose .....	1
Powering Up the Detector .....	2
Understanding the LCD Screen .....	3
Guarantee & Warranty .....	6
Specifications .....	Back Cover

Appearance of device and accessories may vary.

**Note:** 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 Signal Detector.

## Purpose

The purpose of the RF Signal Detector is to assist the installation of a Wilson Electronics Signal Booster, specifically for:

- Mapping the frequency environment
- Pointing directional antennas
- Maximizing Wilson Electronics Signal Booster coverage

## Recommended Outside Antenna

Any Outside Antenna may be used. The recommended antenna for installing a Wilson Signal Booster is the antenna the Signal Booster came with. Directional antennas will help the installer determine the location of a signal-of-interest or interferer. For general frequency mapping, the 304411 is recommended because it is both directional and has wide bandwidth. This will allow the installer to use the RF Signal Detector without ever having to change antennas.

## Inside this Package



RF Signal Detector  
(867501)



Rubber Antenna for indoor  
frequency mapping  
(301144)



Power Supply  
(859912)



Battery Pack  
(859996)

N-Male to N-Male  
Connector  
(971149)



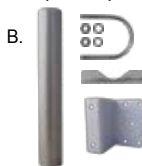
TNC-Female to  
N-Male Connector  
(971148)

## Optional Accessory Kit: (308410)

- A. Wide-Band Panel Antenna 700-2700MHz (304411)
- B. Pole Mount Assembly (901117)
- C. 2' Extension Cable RG58, N-Male to N-Male (951134)



A.



B.



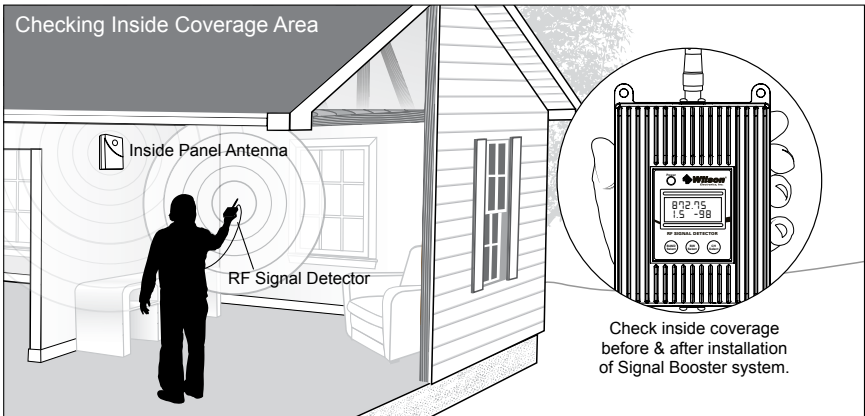
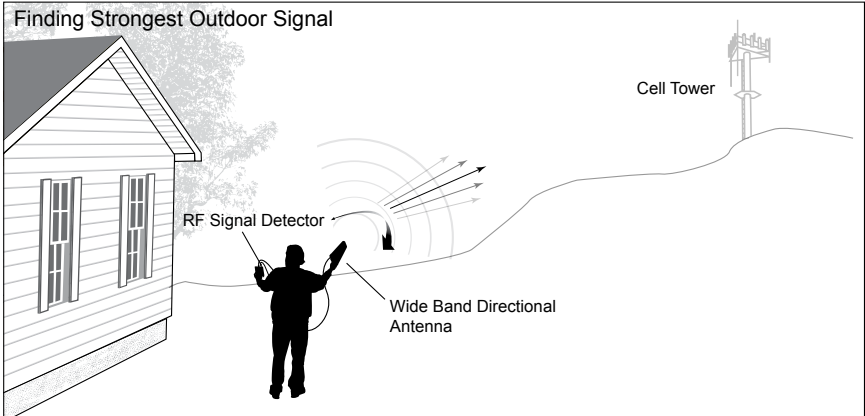
C.

Appearance of device and accessories may vary.

To purchase, contact Wilson Electronics Sales Department at: 800-204-4104

Contact Wilson Electronics Technical Support Team with any questions at 866-294-1660  
or email: [tech@wilsonelectronics.com](mailto:tech@wilsonelectronics.com). Mon.-Fri. Hours: 7 am to 6 pm MST.

## Frequency Mapping




## Powering Up the RF Signal Detector


1. Ensure that the Outside Antenna cable or Rubber Antenna is connected to the RF Signal Detector and the connection is tight before powering up the RF Signal Detector.
2. Plug the AC power supply or battery pack into the RF Signal Detector input marked "6V DC" (carefully, to avoid damaging the center pin). Plug into surge protected AC Power Strip.

**NOTE:** Utilize the velcro included in this kit to secure Battery Pack to bottom side of Signal Detector.

Contact Wilson Electronics Technical Support Team with any questions at 866-294-1660 or email: [tech@wilsonelectronics.com](mailto:tech@wilsonelectronics.com). Mon.-Fri. Hours: 7 am to 6 pm MST.

- If the RF Signal Detector does not have a green light  or if you have questions, please contact Wilson Electronics Technical Support Team at 866-294-1660 or email [tech@wilsonelectronics.com](mailto:tech@wilsonelectronics.com). Technical Support hours are Mon.- Fri. 7 am to 6 pm MST.

## Understanding the LCD Screen

- The **Downlink Center Frequency** is the top number on the screen. Units are MHz.
- The **Pass Bandwidth** is the bottom left number on the screen. Units are MHz.
- The **Detected Cellular Downlink Signal Level** is the bottom right number on the screen. Units are dBm.
- The **BAND Select button**  will select between downlink bands.

**Note:** For a list of band options see tables on page 4.

- The **BW (bandwidth) Select button**  toggles between 1.5 MHz and 10 MHz pass bandwidth.

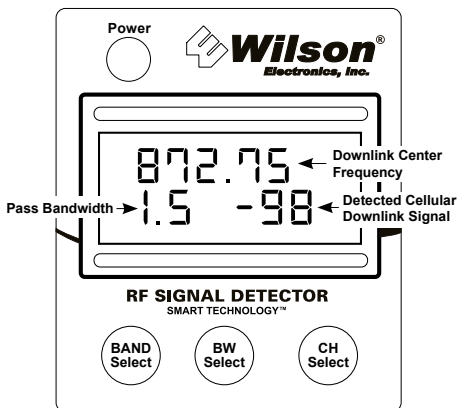
**Note:** For filter characteristics see tables on page 4.

- The **CH (Channel) Select button**  will step to the next channel. Steps are in 1.5 MHz increments for 1.5 MHz BW. Steps are typically 5 MHz increments for 10 MHz BW.

**Note:** For a list of channel options see tables on page 4.

- Any button may be held down to step more quickly.
- If the RF Signal Detector is operating normally the LCD Screen will appear similar to Figure 1.

Figure 1



## To Find Your Wireless Providers Licensed Broadcast Frequencies:

1. Go to <http://wireless2.fcc.gov/UlsApp/UlsSearch/searchLicense.jsp>
2. Look for “Specialized search” on right side of screen.
3. Click on “Geographic.”
4. Enter your region.
5. Enter a specific frequency range to narrow the search results. As the signal detector indicates the downlink frequency, below are the recommended frequency ranges to search for each band:
  - 700 MHz - Search “728-757”
  - 850 MHz - Search “869-894”
  - 1900 MHz - Search “1930-1990”
  - AWS - Search “2110-2155”
6. Click Search.
7. On the Search Results page, click on the wireless provider of interest  
**NOTE:** *Most will show the wireless provider’s name. If it does not show the wireless provider’s name, then select the “Call Sign/Lease ID” and then look at “Contact” for the wireless provider.*
8. Check that the license is “Active” under “Status.”
9. Click “(View Frequencies)” or look at “Associated Frequencies” and “Channel Block.”
10. Click on the “Market” tab and look at the “Spectrum and Market Area” to verify the exact frequency that your provider is operating on in your particular county or counties.

## Available Downlink Bands/Channels

Downlink Band	Pass Bandwidth (MHz)	Downlink Center Frequency	
		Lowest Center Frequency (MHz)	Highest Center Frequency (MHz)
850 MHz (Cellular)	1.5	869.75	895.25
	10	874.5	896.5
1900 MHz (PCS)	1.5	1930.75	1989.25
	10	1935	1985
1700/2100 MHz (AWS)	1.5	2110.75	2154.25
	10	2115	2150
700 MHz (Band 12 & 13)	1.5	728.75	755.75
	10	733	751

## Filter Characteristics, Typical

Pass Bandwidth (MHz)	-3dB BW (MHz)	-40dB BW (MHz)	-45dB BW (MHz)
1.5	1.5	4.45	4.65
10	9.9	12.9	13.2

## About Wilson Electronics

Wilson Electronics, Inc. has been a leader in the wireless communications industry for over 40 years. The company designs and manufactures Signal Boosters, Antennas and related components that significantly improve cellular phone signal reception and transmission in a wide variety of applications, both mobile (marine, RV, vehicles) and in-building (home, office, M2M).

With extensive experience in antenna and Signal Booster 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 Signal Boosters, Wilson Electronics uses a double RF electrically shielded enclosure and cell tower simulators for compliance testing.

All products are engineered and assembled in the company's 55,000-square-foot headquarters in St. George, Utah. Wilson Electronics has product dealers in all 50 states as well as in countries around the world.

## 30-Day Money-Back Guarantee

All Wilson Electronics products are protected by Wilson Electronics 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 Signal Boosters 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.

Signal Boosters 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 Electronics 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 if located within the continental U.S.

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

Failure to use a surge protected AC Power Strip with at least a 1000 Joule rating will void your warranty.

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

**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.

Copyright © 2012 Wilson Electronics, Inc. All rights reserved.

U.S. Patent Nos. – 7,729,669; 7,486,929

## RF Signal Detector Specifications

	RF Signal Detector Specifications
<b>Model Number</b>	2E7501
Antenna connector	N-Type
Antenna impedance	50 ohms
Dimensions	5.7 x 4.2 x 1.5 inch (14.0 x 10.8 x 3.9 cm)
Weight	1.24 lbs
Maximum detectable in-band signal (dBm)	-38
Minimum detectable in-band signal with 1.5MHz BW (dBm)	-110
Minimum detectable in-band signal with 10MHz BW (dBm)	-105
Maximum recommended RF input (dBm)	-38
<b>Power Requirements</b>	110-240 V AC, 50-60 Hz, 4.2W or 6V DC, 700mA



3301 East Deseret Drive, St. George, UT 84790  
For additional Technical Support visit [www.WilsonElectronics.com](http://www.WilsonElectronics.com)  
or email: [tech@wilsonelectronics.com](mailto:tech@wilsonelectronics.com)  
Phone: 866-294-1660 Local: 435-673-5021 Fax: 435-656-2432  
[www.twitter.com/WilsonCellular](http://www.twitter.com/WilsonCellular) [www.facebook.com/WilsonCellular](http://www.facebook.com/WilsonCellular)