

RV 4G™ Cellular Signal Booster

Need help?



www.weboost.com



Customer Support 866-294-1660

Mon.- Fri. Hours: 6 am to 7 pm MST, Sat & Sun 8 am to 5 pm MST

THE SIGNAL BOOSTER UNIT IS DESIGNED FOR USE IN AN INDOOR, TEMPERATURE CONTROLLED ENVIRONMENT (LESS THAN 150 DEGREES FAHRENHEIT). IT IS NOT INTENDED FOR USE IN ATTICS OR SIMILAR LOCATIONS SUBJECT TO TEMPERATURES IN EXCESS OF 150°F.

Installation Instructions for the Following weBoost Signal Booster:

RV 4G™ 700 MHz Band 13 & 17, 800 / 1900 (Ext. PCS) AWS (1700 / 2100)
SmartTech III™ Signal Booster
Model # 470001 FCC ID: PWO460001 IC: 4726A-460001

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

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Package Contents



RV 4G™



Desktop Antenna
(5' RG-174 comes attached)
301211



Outside Panel Antenna Kit
Outside Panel Antenna
30' RG6 coax cables
314473-0630



15' RG6
Extension Cable
950615



AC Power Supply
5V / 2.5A
859948



DC/DC Power
Supply
859113

Appearance of device and accessories may vary.

Mounting Option Accessories (Included)



RV 4G Inside Panel Antenna Upgrade (311155-0630)



Panel Antenna
w/F-Female Connectors
RG6 30' Coax Cable
w/F-Male Connectors
Required F-Female to SMA
Male adapter

Before Getting Started

Before you install your RV 4G and start enjoying improved cellular reception in your RV, please do the following:

1. Read through all the installation steps. This will help you know what to expect from start to finish.
2. Familiarize yourself with all materials in your product package. This will allow you to know which pieces are referenced in the instructions.
3. Identify the location of your best available cellular signal. See page 4.
4. Plan where to mount your antenna.



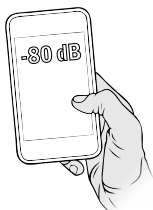
Find the Strongest Cellular Signal

Before you install your RV 4G signal booster, you must determine the location of the best available cellular signal. This will affect the location of your Outside Antenna and will help you get the best performance from your RV 4G. You can find the strongest signal outside your RV, typically at the highest point available, using any of the following methods:

1. Best method:

Connect the Outside Antenna and Desktop Antenna to the RV 4G signal booster. Have one person outside to rotate the Outside Antenna with a second person inside the RV near the Desktop Antenna watching the signal strength on a phone. This allows you to read the signal strength from nearby cell towers.

- a. The person inside should have the phone in test mode so the numerical signal strength can be read. This is more accurate than the bar indicator. Go to www.weboost.com/us/test-mode-instructions for help in finding the test mode for your phone.
- b. The person outside should turn the Outside Antenna 45 degrees at a time, and walk around the RV. Allow 30 seconds for the phone to register with each turn.
- c. The person inside should note the readings on the phone with each turn. Signal readings usually appear as a negative number. The closer the number gets to zero, the stronger the signal (for example, -86 dB would be a moderately good reading while -55 dB would be an excellent reading, and -110 dB would be a weak, or unusable signal).



- d. Once you have determined which direction provides the strongest outside signal, you can install the Outside Antenna in that general direction.

2. Good methods:

- a. Place calls from several locations outside your RV. As you move to different locations, note where you get the best reception.
- b. If you have a smart phone, you can download apps that help you identify locations of cell phone towers or the strongest signal. Go to the App Store and search for "cell signal" to find available apps for your device.



3. **Acceptable method:** Check the bar indicator on your cell phone display and note where the signal appears the strongest. (Note: cell phone bars are only an approximation of signal strength and vary from phone to phone.) Phones can take up to 30 seconds to reset to a new reading. Be patient and repeat your signal check several times.

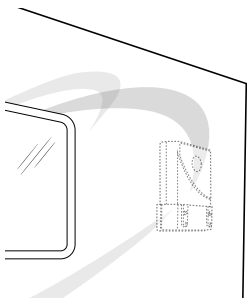
WAIT 30 SECONDS



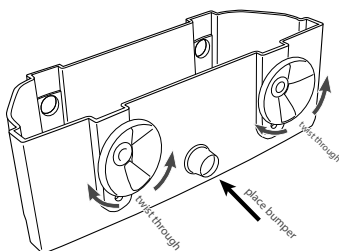
Install Outside Antenna Mount

Ready to Install Outside Antenna Mount

1. Select a location roughly in the direction of the strongest cellular signal (see section headed "Find the Strongest Cellular Signal" on page 4).

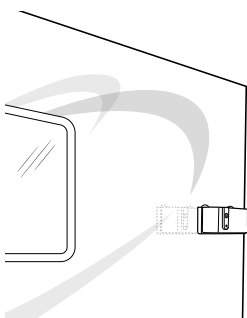


2. Clean the area on the side of the RV with the alcohol prep pad included.
3. Insert the suction cups included into the holes on the Outside Antenna cradle using a twisting motion. Place bumper (included) between the suction cups.

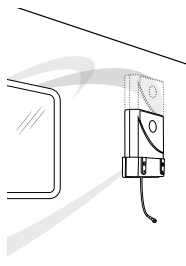


4. Press the suction cups onto the RV in the desired location.

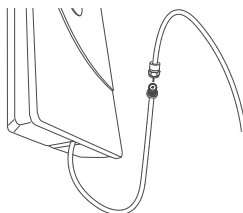
Note: For best performance, vertical distance or higher mounting of the antenna is recommended.



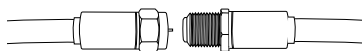
5. Adhere the supplied 3M tape (optional) to the back of the antenna and Place the cover over the back of the antenna.
6. Insert the Outside Antenna into the cradle (the cover that you installed should face the RV).



7. Connect the supplied coax cable to the antenna lead cable on the Outside Antenna.



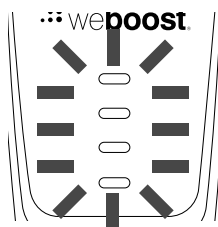
8. Route the cable as desired to the location of the RV 4G. If you need use both coax cables, attach the 15' extension cable.



9. Connect the coax cable to the RV 4G. Connect the Desktop Antenna to the RV 4G. For instructions on installing the Desktop Antenna and placement refer to page 7.



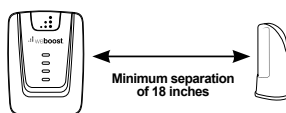
If your RV 4G is working correctly, the lights will be green. If the lights are orange or red, see the "Troubleshooting" section on page 8.



Additional Considerations

Keep the following guidelines in mind to maximize your signal strength:

1. Always turn the Outside Antenna so the weBoost logo is toward the strongest cellular signal. The strength of the signal at the Desktop Antenna (and therefore, how far it will transmit a signal) is dependent upon the signal strength at the Outside Antenna. Be sure to maximize the strength at the Outside Antenna. Rotate in small increments.
2. Maintain a distance of at least 20 feet from the Outside Antenna to the RV 4G unit.
3. Maintain at least 20 feet of vertical or horizontal separation between the Outside Antenna and the Desktop Antenna.
4. Keep the RV 4G and the Desktop Antenna **at least 18 inches away** from each other with the weBoost logo on the Desktop Antenna facing away from the RV 4G.



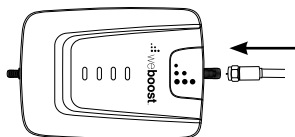
5. Do not face the Outside Antenna and the Desktop Antenna toward each other. This can cause the RV 4G to show red lights and shut down, preventing oscillation or feedback (see troubleshooting on page 8). In other words, the weBoost logos on the Outside Antenna and the Desktop Antenna should always be facing away from each other.



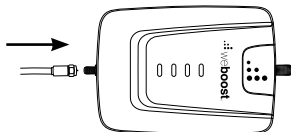
RV 4G and Desktop Antenna Placement

1. Select a location for the RV 4G that is away from excessive heat, direct sunlight, and moisture and has proper ventilation. Recommended locations include on a shelf, in a closet or cupboard. Be sure the location is near a power outlet. To ensure proper ventilation, keep other objects at least six (6) inches away.

2. Place the RV 4G on a desk, table or other solid surface where you have routed the cable from the Outside Antenna.
3. Attach the coax cable from the Outside Antenna to the RV 4G at the connector labeled "Outside Antenna."



4. Attach the Desktop Antenna to the connector labeled "Inside Antenna."



5. Ensure the Desktop Antenna is facing away from both the RV 4G and the Outside Antenna.



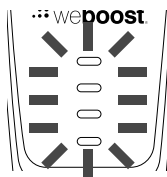
Note
Face Inside Antenna
away from RV 4G and
Outside Antenna

6. Plug in the power supply to the RV 4G at the input marked "Power" (next to the "Outside Antenna" connector).
7. Check the lights on top of the RV 4G. 4 green lights mean the booster is working properly. If you do not have green lights, see the following Troubleshooting Tips.

Need help?



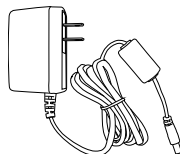
www.weboost.com



Power Supply Options

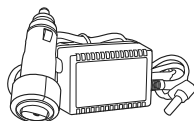
There are 3 options for powering up the RV 4G.

Option 1: AC/DC Power Supply



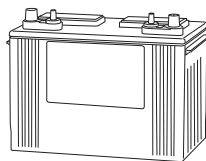
The AC power supply (859948) will provide power for 110v connections.

Option 2: DC/DC Power Supply



The DC/DC Power Supply (859113) will provide power through a CLA connection.

Option 3: Hardwired Power Supply



For a hardwired connection, the DC/DC power supply (859113) can be physically altered. This allows you to directly connect the power supply to a power source – this is useful for:

- connections to a battery or dry camping
- direct power connections to a vehicle, or RV

To do this:

Lay out your DC/DC power supply.

Cut off the CLA power adapter. Make sure that the inline regulator is intact – this will ensure the proper power is delivered to your booster.

Strip the wire, noting which is positive and negative (white stripe=positive, black=negative)

Connect to your power source.

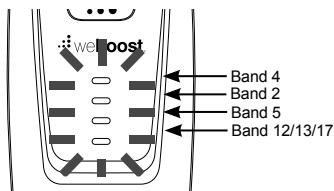


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Troubleshooting & Understanding Lights

The RV 4G includes four indicator lights, one for each band (see FAQ for explanation of MHz bands). Each indicator light will either be green, orange or red.



Green indicates that the booster is powered and operating at maximum gain.

Solid Red indicates that the booster has shut off on the associated frequencies to prevent oscillation (feedback).

Solid Orange indicates that the booster has shut off on the associated frequencies due to close proximity of a cell tower.

Green/Orange Blinking indicates that the booster is operating at a reduced gain due to close proximity of a cell tower.

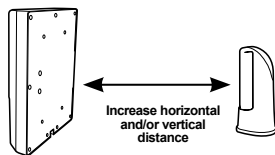
Green/Red Blinking indicates that the booster is operating at a reduced gain to prevent oscillation (feedback).

Note: All red light issues must be resolved before orange light issues.

Fixing Red Light Issues

If one or more lights on the Signal Booster are red:

1. Make sure all connections are tight.
2. Increase the distance between the outside antenna and the inside antenna, by moving them horizontally and/or vertically farther apart until the light(s) change to green.



3. Follow the same steps for a green/red blinking light until the light goes solid green.
4. If more separation is not possible and the coverage of the booster is too small with a green/red blinking light indicating reduced gain, contact the weBoost Customer Support Team for assistance: 866-294-1660.

Fixing Orange Light Issues

If one or more lights on the Signal Booster are orange:

1. Move the Outside Antenna away from the strongest cellular signal in small increments until the light turns green or green/orange blinking.
2. If the light remains orange, or if the green/orange blinking light indicating reduced gain is not providing enough coverage area, contact the weBoost Customer Support Team for assistance: 866-294-1660.

Lights Off

If one or more of the lights on the Signal Booster are off verify power to your surge protected power strip.

NOTE: The Signal Booster can be reset by disconnecting and reconnecting the power supply.

Additional FAQ:

What hours can I contact customer support?

Customer Support can be reached from Mon.- Fri. Hours: 6 am to 7 pm MST, Sat & Sun 8 am to 5 pm MST, by calling (866-294-1660), or by email, at support@weboost.com.

How does weather affect the performance of my Outside Antenna?

Water vapor (e.g. rain, fog, snow or other precipitation) creates an effective filter to cellular signal. In times of heavy precipitation, you may see less performance.

What's the difference between the 800 MHz and the 1900 MHz bands? How do I know which MHz band my cell phone uses?

The RV 4G works with all major North American cellular providers on the 800 & 1900 MHz frequencies. Traditionally, 800/1900MHz are associated with voice and 3G data; while 700MHz and 1700/2100MHz are associated with 4G data.

Why do I need to maintain at least 20 feet of separation, but no more than 50 feet? OR Why do I need to create so much distance between the antennas?

Antennas connected to a booster create a sphere of signal. When these spheres overlap, a condition called oscillation occurs. This oscillation can be thought of as noise, which causes the booster to shut down to prevent damage from occurring. The best way to keep these spheres of signal from creating noise is to maintain separation between your Inside and Outside Antennas. However – as any cable has loss, we recommend that you try to minimize the total separation to keep within the range of 20-50 feet.

Carrier Frequency Use

We recommend visiting www.wirelessadvisor.com (United States) or <http://bit.ly/1mQf2GI> (Canada) for information regarding the frequency band used by your cell service provider in a specific geographical location.



INSIDE ANTENNA EXPANSION KIT

- Kit 309900-50N
- 2 - Wall Panel antennas
 - 1 - 50 ohm 3-Way Splitter
- Kit 309905-50N
- 3 - Wall Panel Antennas
 - 3 - 2-Way 50 Ohm Splitters
- Kit 309902-75F
- 2 - Wall Panel Antennas
 - 1 - 3-Way 75Ohm Splitter
- Kit 309903-75F
- 3 - Wall Panel Antennas
 - 3 - 2-Way 75Ohm Splitters
- Kit 309904-75F
- 1 - Wall Panel Antenna
 - 1 - 2-Way 75 Ohm Splitter

INSIDE ANTENNA KITS








- Kit 301121-40010
- 50 Ohm Dome Antenna
 - 10' LMR400
- Kit 311135-40060
- 50 Ohm Wall Panel Antenna
 - 60' LMR400
- Kit 301151-0610
- 75 Ohm Dome Antenna
 - 10' RG6 Cable
- Kit 311135-5820
- 50 Ohm Wall mount Panel Antenna
 - 20' RG58 Cable
- Kit 301151-1110
- 75 Ohm Dome Antenna
 - 10' RG11 cable
- Kit 311155-1150
- 75 Ohm Wall mount Panel Antenna
 - 50' RG11 Cable
- Kit 301211
- Desktop Antenna w/ 5' RG174

50 OHM OUTSIDE ANTENNA KITS

- Kit 314453-5825
- 50 Ohm Pole Mount Panel Antenna
 - 25' RG58 Cable
- Kit 314411-5825
- 50 Ohm Wide Band Directional
 - 25' RG58 Cable
- Kit 301111-5850
- Yagi Directional Antenna
 - 50' RG58 Cable
- Kit 311129-5840
- 800 MHz Yagi Directional
 - 40' RG58 Cable
- Kit 311203-5820
- Omni-Directional antenna
 - 20' RG58 Cable
- Kit 311124-5830
- 1900 MHz Yagi Antenna
 - 30' RG58 Cable
- Kit 311203-40020
- Omni-Directional antenna
 - 20' LMR400 Cable
- Kit 301111-400170
- Yagi Directional w/ N-Female
 - 170' LMR400
- Kit 311124-400100
- 1900 MHz Yagi Directional
 - 100' LMR400 Cable
- Kit 311129-400100
- 800 MHz Yagi Antenna
 - 100' LMR400 Cable
- Kit 314411-40075
- 50 Ohm Wide Band Directional Antenna
 - 75' LMR400 Cable
- Kit 314453-40075
- 50 Ohm Pole Mount Panel Antenna
 - 75' LMR400 Cable
- Mini-Mag 301126 w/12.5 RG174 cable-SMA
- Kit 301111-0675
- Yagi Directional Antenna
 - 75' RG6 Cable
 - N-Male to F-Female adapter
- Kit 311201-0620
- Omni Antenna w/ F-Female
 - 20' RG6 Cable
- Kit 311129-0660
- 800 MHz Yagi Directional
 - 60' RG6 Cable
 - N-Male to F-Female adapter
- Kit 311129-0650
- 1900 MHz Yagi Directional
 - 50' RG6 Cable
 - N-Male to F-Female adapter
- Kit 314473-0640
- 75 Ohm Pole Mount Panel Antenna
 - 40' RG6 Cable
- Kit 311141-0620
- 75 Ohm Grey Brick Antenna
 - 20' RG6 Cable
- Kit 301111-11140
- Yagi Directional Antenna
 - 140' RG11 Cable
 - N-Male to F-Female adapter
- Kit 311201-1120
- Omni Directional w/ F-Female
 - 20' RG11 Cable
- Kit 311129-11110
- 800 MHz Yagi Directional
 - 110' RG11 Cable
 - N-Male to F-Female adapter
- Kit 311124-1180
- 1900 MHz Yagi Directional
 - 80' RG11 Cable
 - N-Male to F-Female adapter
- Kit 314473-1175
- 75 Ohm Pole Mount Panel Antenna
 - 75' RG11 Cable
- Kit 314475-0630
- 75 Ohm Wide Band Directional
 - 30' RG6 Cable
- Kit 314475-1175
- 75 Ohm Wide Band Directional
 - 75' RG11 Cable
- Kit 311141-1120
- 75 Ohm Grey Brick Antenna
 - 20' RG11 Cable



Safety Guidelines

-  **WARNING:** To uphold compliance with network protection standards, all active cellular devices must maintain at least 6 feet of separation distance from Panel and Dome antennas and 4 feet of separation distance from Desktop antennas.
-  **WARNING:** Connecting the Signal Booster directly to the cell phone with use of an adapter will damage the cell phone.
-  **WARNING:** Use only the power supply provided in this package. Use of a non-weBoost product may damage your equipment.
-  **WARNING:** The Signal Booster unit is designed for use in an indoor, temperature-controlled environment (less than 150 degrees Fahrenheit). It is not intended for use in attics or similar locations subject to temperatures in excess of that range.
-  **WARNING:** The Outside Antenna must be installed no higher than 10 meters (32'9") above ground.
-  **WARNING:** Take care to ensure that neither you nor the pole comes near any power lines during installation.
-  **RF SAFETY WARNING:** Any antenna used with this device must be located at least 8 inches from all persons.

This is a CONSUMER device.

BEFORE USE, you **MUST REGISTER THIS DEVICE** with your wireless provider and have your provider's consent. Most wireless providers consent to the use of signal boosters. Some providers may not consent to the use of this device on their network. If you are unsure, contact your provider.

You **MUST** operate this device with approved antennas and cables as specified by the manufacturer. Antennas **MUST** be installed at least 20 cm (8 inches) from any person.

You **MUST** cease operating this device immediately if requested by the FCC or a licensed wireless service provider.

WARNING. E911 location information may not be provided or may be inaccurate for calls served by using this device.

This device may be operated **ONLY** in a fixed location for in-building use.

This device complies with Part 15 of FCC rules. Operation is subject to 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. Changes or modifications not expressly approved by weBoost could void the authority to operate this equipment.



Signal Booster Specifications

	RV 4G™				
Model Number	470001				
Connectors	SMA-Female on the Inside Antenna / F-Female on the Outside Antenna				
Antenna Impedance	50 Ohms / 75 Ohms				
Frequency	704-746 MHz, 746-787 MHz, 824-894 MHz, 1850-1995 MHz, 1710-1755/2110-2155 MHz				
Passband Gain (nominal)	700 MHz Band17 57.3	700 MHz Band13 55.0	800 MHz Band 5 57.2	1700/2100 MHz Band 4 60.5	1900 MHz Band 25/2 57.0
20 dB Bandwidth (MHz)	700 MHz Band17	700 MHz Band13	800 MHz Band 5	1700/2100 MHz Band 4	1900 MHz Band 25/2
Typical	26.2	26.7	38.3	73.5	78.4
Maximum	29.8	29.8	39.5	73.8	80.1
Power output for single cell phone (Uplink) dBm	700 MHz Band17 Band17	700 MHz Band13 Band13	800 MHz Band 5 Band 5	1700 MHz Band 4 Band 4	1900 MHz Band 25/2 Band 25/2
	23.7	23.6	24.6	24.9	23.3
Power output for single cell phone (Downlink) dBm	700 MHz Band17 Band17	700 MHz Band13 Band13	800 MHz Band 5 Band 5	2100 MHz Band 4 Band 4	1900 MHz Band 25/2 Band 25/2
	0.9	-1.0	2.1	5.8	6.1
Power output for multiple received channels (Uplink) dBm	Maximum Power				
No. Tones	700 MHz Band17 Band17	700 MHz Band13 Band13	800 MHz Band 5 Band 5	1700 MHz Band 4 Band 4	1900 MHz Band 25/2 Band 25/2
2	21.3	20.7	23.0	19.9	18.1
3	17.7	17.2	19.4	16.4	14.6
4	15.2	14.7	16.9	13.9	12.1
5	13.3	12.8	15.0	11.9	10.2
6	11.7	11.2	13.4	10.4	8.6
Power output for multiple received channels (Downlink) dBm	Maximum Power				
No. Tones	700 MHz Band17 Band17	700 MHz Band13 Band13	800 MHz Band 5 Band 5	2100 MHz Band 4 Band 4	1900 MHz Band 25/2 Band 25/2
2	-2.0	-3.2	1.8	-0.5	-2.2
3	-5.6	-6.7	-1.7	-4.1	-5.8
4	-8.1	-9.2	-4.2	-6.6	-8.3
5	-10.0	-11.2	-6.1	-8.5	-10.2
6	-11.6	-12.8	-7.7	-10.1	-11.8
Noise Figure	7 dB nominal				
Isolation	> 110 dB				
Power Requirements	AC / DC 5V, 2.5A, w/2.5x5.5mm Jack				

Each Signal Booster is individually tested and factory set to ensure FCC compliance. The Signal Booster cannot be adjusted without factory reprogramming or disabling the hardware. The Signal Booster will amplify, but not alter incoming and outgoing signals in order to increase coverage of authorized frequency bands only. If the Signal Booster is not in use for five minutes, it will reduce gain until a signal is detected. If a detected signal is too high in a frequency band, or if the Signal Booster detects an oscillation, the Signal Booster will automatically turn the power off on that band. For a detected oscillation the Signal Booster will automatically resume normal operation after a minimum of 1 minute. After 5 (five) such automatic restarts, any problematic bands are permanently shut off until the Signal Booster has been manually restarted by momentarily removing power from the Signal Booster. Noise power, gain, and linearity are maintained by the Signal Booster's microprocessor.

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.



2-Year Warranty

weBoost Signal Boosters are warranted for two (2) years 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 weBoost. weBoost shall, at its option, either repair or replace the product.

This warranty does not apply to any Signal Boosters determined by weBoost 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 Customer Support at 1-866-294-1660.

Disclaimer: The information provided by weBoost is believed to be complete and accurate. However, no responsibility is assumed by weBoost 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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weBoost products covered by U.S. patent(s) and pending application(s)

For patents go to: weboost.com/us/patents



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