

# Force5 2.0<sup>™</sup>

Voice and 4G LTE Cellular Booster Kit with Built-in Sentry Remote Monitoring



For technical support:

Email: [support@surecall.com](mailto:support@surecall.com) | Call: 1-888-365-6283

Available Monday – Friday, 7am – 5pm PST

# How It Works

Thank you for purchasing SureCall's Force5 2.0 voice and 4G LTE cellular booster kit with built-in Sentry. Force5 2.0 was specifically designed to eliminate frustrations over dropped calls and slow 4G data along with the ability to monitor and adjust booster performance off site.

If you have any questions during setup, please reach out to our US-based experienced support technicians:

**Call:** 1-888-365-6283

**Email:** [support@surecall.com](mailto:support@surecall.com)

**Visit:** [www.surecall.com/support](http://www.surecall.com/support)



Watch installation, optimization and troubleshooting techniques in our SureCall University YouTube channel



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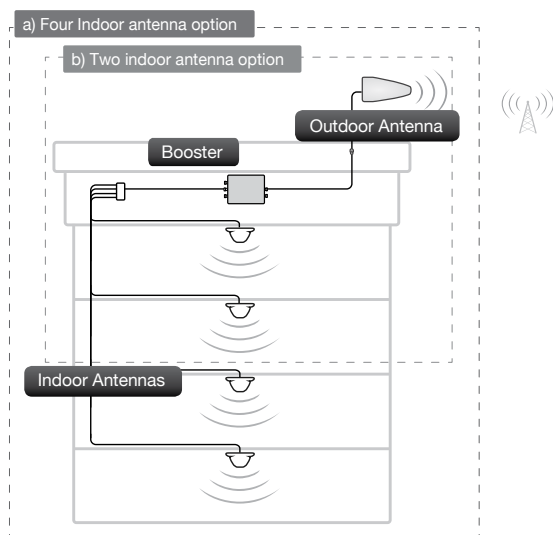
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## How It Works

SureCall's Force5 2.0 cellular boosting function uses a high-quality bidirectional signal booster that enhances signals to areas that are prone to weak cellular coverage. It works with two types of antennas:

- 1) An outdoor antenna that communicates with the cell tower.
- 2) A set of Indoor antennas that communicate with your mobile devices.

Signals sent from a cell tower are received by the outdoor antenna, amplified by the booster and then sent to your phone via the indoor antennas. When your phone transmits, the signal is sent to the indoor antennas, and then sent to the cell tower via the outdoor antenna.



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# Package Contents

## Package Contents

1. Unpack all package contents. For missing or damaged items, contact your reseller. Keep the carton and packing material to store the product in case you need to return it.
2. Turn over the signal booster and record the model and serial number for reference:

**Serial #:** \_\_\_\_\_

**Purchase Date:** \_\_\_\_\_

Force5 2.0 signal booster kits are available with the following:

- One SureCall Force5 2.0 booster with mounting hardware and power supply
- One outdoor antenna (either Omni or Yagi)
- One SC-400 low-loss coax cable to connect outdoor antenna to booster
- One or more indoor antennas (either Dome, Ultra Thin, or Panel)
- Indoor cable: One cable per indoor antenna (to connect antennas to signal booster)
- Also included with kits with multiple indoor antennas, one splitter and cable (splitter connects multiple indoor antennas to booster)

## Kit Options

Model number	Model name	Outside Antenna Type	Inside Antenna (Qty) Type	Inside Cable (Qty) Splitter
SC-PolyO2-72-OD	Force5 2.0 Omni/Dome	Omni	(1) Dome	(1) -
SC-PolyO2-72-OD4	Force5 2.0 Omni/4 Dome	Omni	(4) Dome	(4) 1
SC-PolyO2-72-OP	Force5 2.0 Omni/Panel	Omni	(1) Panel	(1) -
SC-PolyO2-72-O4P	Force5 2.0 Omni/4 Panel	Omni	(4) Panel	(4) 1
SC-PolyO2-72-YD	Force5 2.0 Yagi/Dome	Omni	(1) Dome	(1) -
SC-PolyO2-72-YD4	Force5 2.0 Yagi/4 Dome	Yagi	(4) Dome	(4) 1
SC-PolyO2-72-YP	Force5 2.0 Yagi/Panel	Yagi	(1) Panel	(1) -
SC-PolyO2-72-OU	Force5 2.0 Omni/ Ultra Thin	Omni	(1) Ultra Thin	(1) -
SC-PolyO2-72-O4U	Force5 2.0 Omni/4 Ultra Thin	Omni	(4) Ultra Thin	(4) 1
SC-PolyO2-72-YU	Force5 2.0 Yagi/ Ultra Thin	Yagi	(1) Ultra Thin	(1) -
SC-PolyO2-72-Y4U	Force5 2.0 Yagi/4 Ultra Thin	Yagi	(4) Ultra Thin	(4) 1

## Booster



Force5 2.0

## Outside Antenna (options)



Omni



Yagi

## Outside Cable



Cable-SC-400

## Inside Antenna (options)



Dome(s)



Ultra Thin(s)



Panel(s)

## Inside Cable (options)

### Single Antenna Kits



Cable-SC-400

### Multiple Antenna Kits



Splitter + SC400



(x4) Cable-SC-400

## Before Installation

Before installation, make note of these important factors:

- ***A “soft install” is recommended for each section of your installation before permanent placement of parts.***
- The booster will need to be close enough to an existing electrical outlet.
- A minimum of 50 ft. of separation between the outdoor antenna and indoor antennas is recommended.
- There will need to be sufficient cable length between planned outdoor antenna location and booster connector.
- There will need to be sufficient cable length between planned indoor antenna location and booster connector. Additional cable may be purchased if needed.

## Installation Overview

1. Find the outside area that has the strongest signal. (See page 7).
2. Install the outdoor antenna in the area identified in step 1. (See page 8).
3. Install the indoor antennas where increased signal is needed. (See page 11).
4. Mount the signal booster, connect the outdoor and indoor antenna cables to the signal booster, and connect the booster to an AC power source. (See page 16).

**FCC 27.5 (d)(4) Statement: Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band as well as mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP. Fixed stations operating in the 1710-1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.**

## Section 1: Booster System Installation

### Step 1. Find the Area Outside with the Strongest Signal

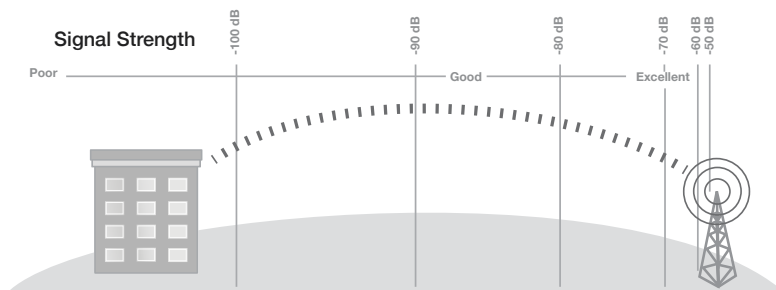
#### Finding Your Strongest Cellular Signal

To send and receive cell phone calls you need to have an adequate cellular signal. This usually means having to be somewhat close to a cell phone tower. Your cellular signal is measured in decibels (dB), which represents the power of the signal. Signal readings appear as a negative number, for example -85 dB. The stronger your signal is the closer it gets to zero. As the illustration below shows a -50 dB signal reading is very strong while a signal reading of -100 dB and above is very weak.

#### How to Determine Your dB Signal Reading

- Using an iPhone: Dial \*3001#12345#\*, a Field Test screen will appear press down on the home button for a few seconds so your dB reading will appear in the upper left hand corner.
- Using an Android: Download the “Network Signal Info” within the Google Play store. Once installed, you will be able to view your dB strength.
- Internet: Go to: [www.speedtest.net](http://www.speedtest.net) to test your 3G and 4G data rates.
- Alternatively, you may purchase a SureCall Signal Meter (SC-meter-01)\* which detects and displays the current signal levels.

*\*The SureCall Signal Meter may be used to read signal levels to identify the best location for an antenna, as well as, identify the optimum angle at which to aim a directional outside antenna when connected to the antenna using a provided cable.*



# Booster Installation

## Step 2. Install the Outdoor Antenna

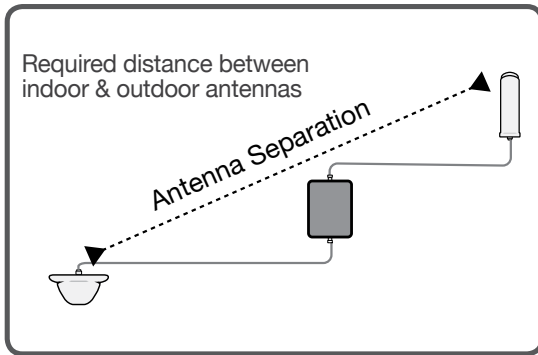
After identifying the area of strongest signal, choose the surface where you will mount your outside antenna. Before proceeding, please note:

A **directional Yagi antenna** works best when facing the direction of the nearest cellular tower being used by your carrier

An **omni antenna** receives and sends signals in a 360° radius.

- For both antenna options, mount the outside antenna as high as possible and ensure that the mounting area has at least a 12-inch radius clear of obstructions and other radiating elements.
- For best performance, place the outside antenna at least 50 feet from the inside antenna (see graphic “Antenna Separation”). Also note, Vertical separation is preferred as it is more effective than horizontal separation.
- Always orient directional antennas to point away from other system antennas (see illustration, “Antenna Aiming”).

### Antenna Separation



### Outdoor/ Indoor Antenna Separation

A minimum of 50 ft. of separation between the outdoor antenna and indoor antennas is recommended for best performance.

Reducing antenna separation will reduce the coverage provided by the booster and generally, additional separation will provide better performance.

### Option A. Yagi Antenna

Before installing a Yagi, or directional antenna, note that the antenna should be mounted on a pole or pipe (not provided), at the highest possible location and mounted horizontally, aimed in the direction of your nearest cell tower. To find the location of your carrier's closest cell tower, go to [www.antennasearch.com](http://www.antennasearch.com).

Ensure that the mounting area has at least a 12-inch radius clear of obstructions and other radiating elements and orient the antenna with the drip hole at the bottom.

Once you have identified your install location, assemble the u-bolt, bracket, nuts and washers onto a pole or pipe (not provided) as shown in the illustration. Keep the connections loose enough to allow the antenna to rotate until the optimum direction is found.

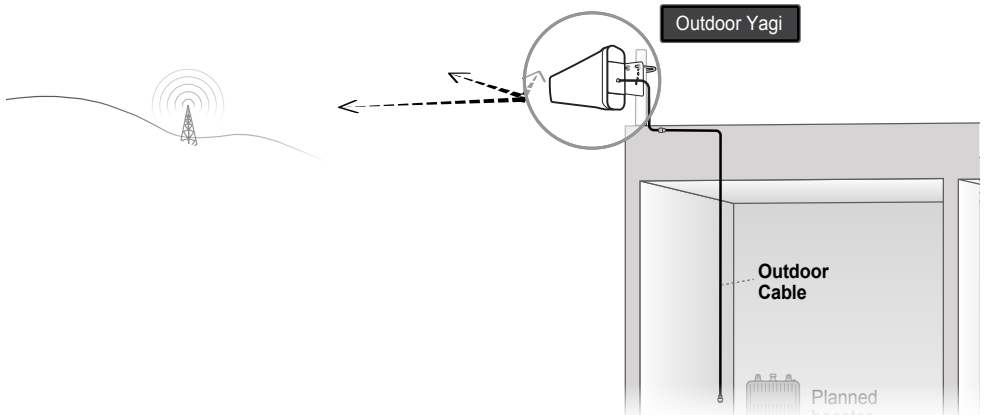
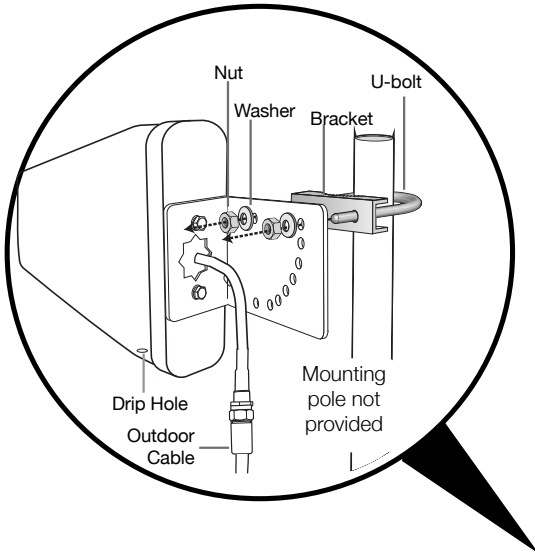
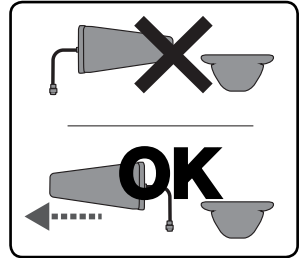




# Booster Installation

Once the outside antenna is secured to a pipe or pole, connect antenna to cable connector of end of the length of cable and run along route to planned location of your booster.

## Antenna Aiming



**IMPORTANT:** For boosters enhancing AWS frequencies, the FCC has stated for consumer signal boosters operating as a fixed station in the 1710 - 1755 MHz uplink 2110 - 2155 downlink bands, the users or installation manual must contain the 30 foot height restriction requirements per FCC 27.50(d)(4).

**IMPORTANT:** Do not collocate antennas or operate the outdoor antenna with any other antenna or signal booster.

# Installation

## Option B: Omni Antenna

The omni antenna is omni-directional, which receives and sends signals in a 360° radius. The provided hardware allow for either a surface mount or pole-mount. The antenna should be mounted in an upright position. See illustration.

Mount antenna to a vertical surface:

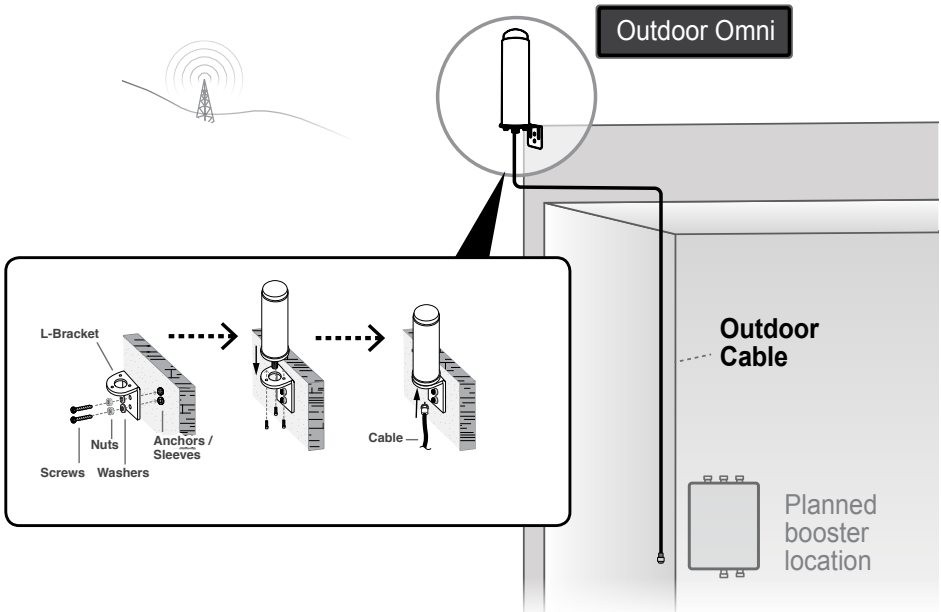
1. Using vertical plate of L-bracket, mark position of desired placement.
2. Place vertical L-bracket into desired location and tap the screws, head first, along with sleeve, into stucco 1/2 to 5/8 inches deep into place. (Note: Alternate screws may be required for different surfaces such as wood or concrete.)
3. In this order, place washer, lock washer and nut on each screw and tighten until secure. When tightening screw, sleeve will expand to secure plate.
4. Use provided screws to secure antenna base onto horizontal plate.
5. Connect antenna to cable connector for the outdoor cable provided with your kit and run along route to planned location of your booster.



Omni antenna with surface mount hardware



Pole-mount hardware



## Step 3. Install the Indoor Antennas

Indoor antennas for the Force5 2.0 come with one or more omni-directional (Dome or Ultra Thin) or directional (Panel) antennas. One indoor cable is provided per antenna. For kits with multiple antennas, a cable splitter and joining cable is also supplied.

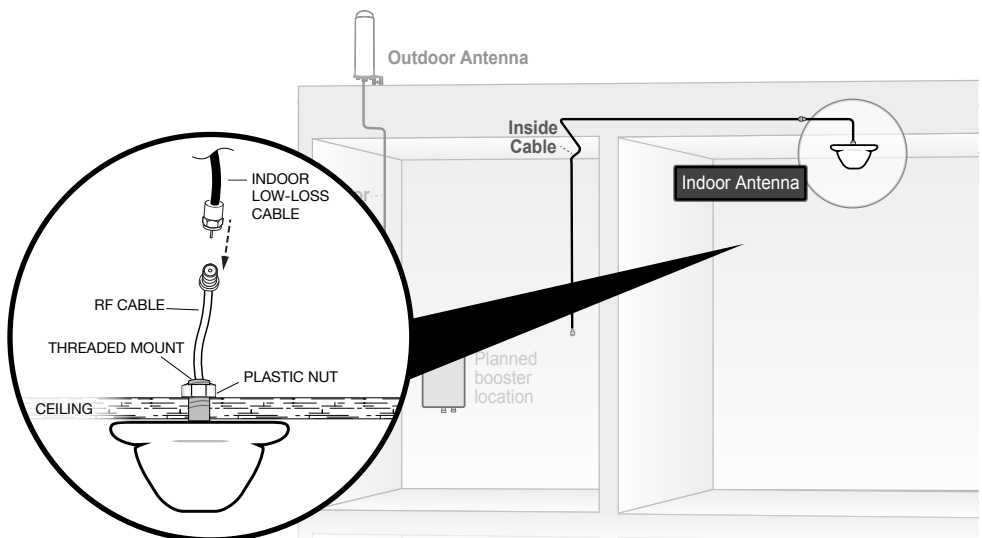
- For omni directional antennas, mount on a ceiling in a central location where signal is needed.
- For directional antennas, mount on a wall that faces in the direction signal is needed.

### Option A: Indoor Dome Antenna(s)

The SC-222W wideband antenna is an omni-directional interior antenna that gathers and sends signals from all directions. Range of antenna is dependent on three factors:

1. Physical obstructions
2. Power generated by booster
3. Signal level received by the outdoor antenna

Besides the antenna itself, parts include mounting equipment. It should be mounted on a ceiling pointed down and in a central location for best results. You can also install your interior antenna above the ceiling panel provided there are not materials that could obstruct signals.



# Installation

## For Each Antenna:

1. Drill a 20 mm diameter hole in the ceiling. The ceiling thickness should be 20 mm, maximum.
2. Unscrew fixing nut from antenna. Place antenna cable through hole. Screw the fixing nut back onto antenna and cable on crawl space side of ceiling and fasten.
3. Tighten fixing nut to secure antenna (do not over-tighten).

## For kits with a single indoor antenna:

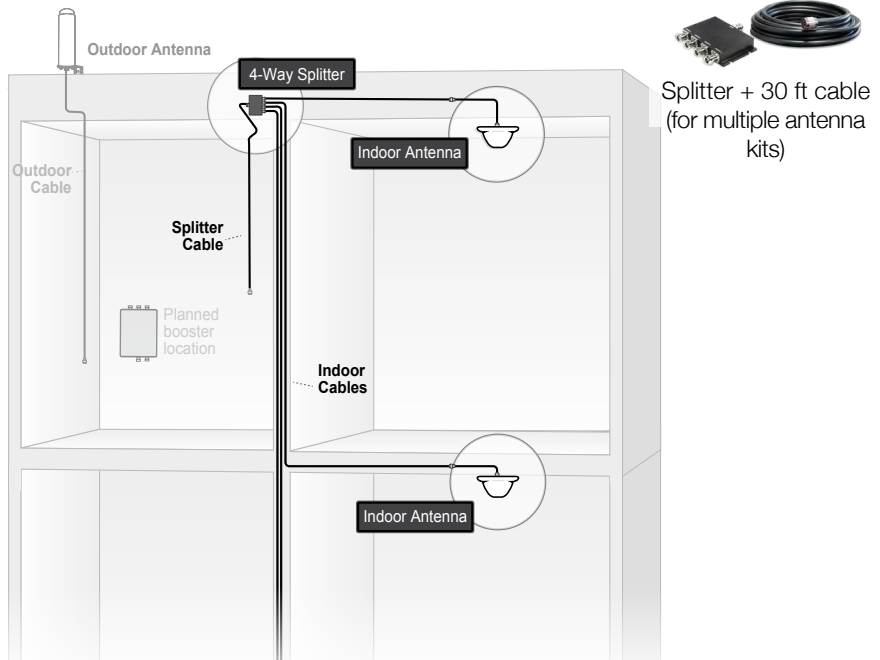
4. Connect female antenna connector to a the indoor antenna cable provided with your kit and run along route toward the planned location of your booster.

## For kits with multiple indoor antennas:

4. Connect each indoor antenna to a the indoor antenna cable provided with your kit and run along route toward the planned location of your booster. Join all cables to provided cable splitter.
5. Connect one end of the provided cable to the remaining port of the cable splitter labeled INPUT and route cable to the planned location of your booster.

Note: Be sure to provide enough separation from outdoor antenna (at least 50 ft. is recommended).

*Important: Storage and transportation: Store and place in non-extreme room-temperature and dry environment This antenna should not be used near open fire or flame.*



## Option B: Indoor Ultra Thin™ Antenna

The SC-288W wideband antenna is an omni-directional interior antenna that gathers and sends signals from all sides. Besides the antenna itself, parts include mounting options for an install that is accessible by crawl space or one that is not. Optimally, It should be located central to where signal is needed with minimal obstacles. The range of this antenna is dependent on three factors:

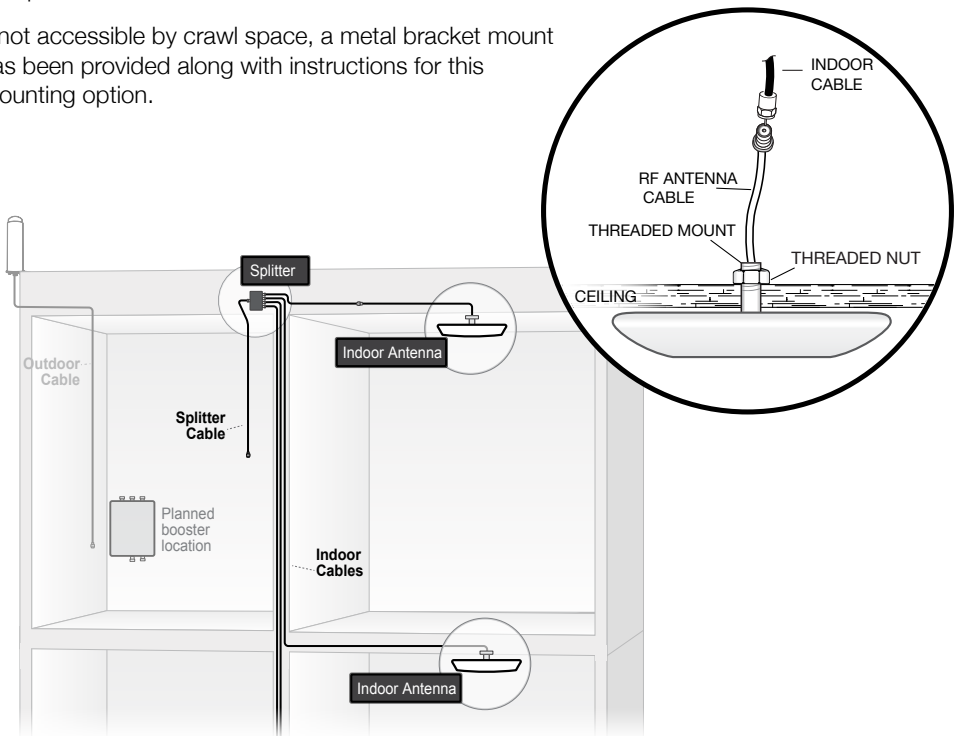
1. Physical obstructions
2. Power generated by booster
3. Signal level received by the outdoor antenna

### For Each Antenna:

If accessible by crawl space:

1. Drill a 20 mm diameter hole in the ceiling. The size should be large enough to allow the antenna's plastic cable base to pass through.
2. Place antenna cable through hole.
3. From crawl space, screw the fixing nut onto antenna and fasten around the threaded plastic cable base.

If not accessible by crawl space, a metal bracket mount has been provided along with instructions for this mounting option.



# Installation

## *For kits with a single indoor antenna:*

4. Connect female antenna connector to a the indoor antenna cabling provided with your kit and run along route toward the planned location of your booster.

## *For kits with multiple indoor antennas:*

1. Connect each indoor antenna to the cable provided with your kit and run along route toward the planned location of your booster. Join all cables to provided cable splitter.
2. Connect one end of the provided cable to the remaining port of the cable splitter labeled INPUT and route cable to the planned location of your booster.

Note: Be sure to provide enough separation from outdoor antenna (at least 50 ft. is recommended).

## **Option C: Indoor Panel Antenna**

The provided panel antennas are multi-band directional antennas with a 120° reach. They should be mounted facing the area signal is needed. It is also important that they do not point toward the outdoor antenna. Range of antenna is dependent on three factors:

1. Physical obstructions
2. Power generated by booster
3. Signal level received by the outdoor antenna

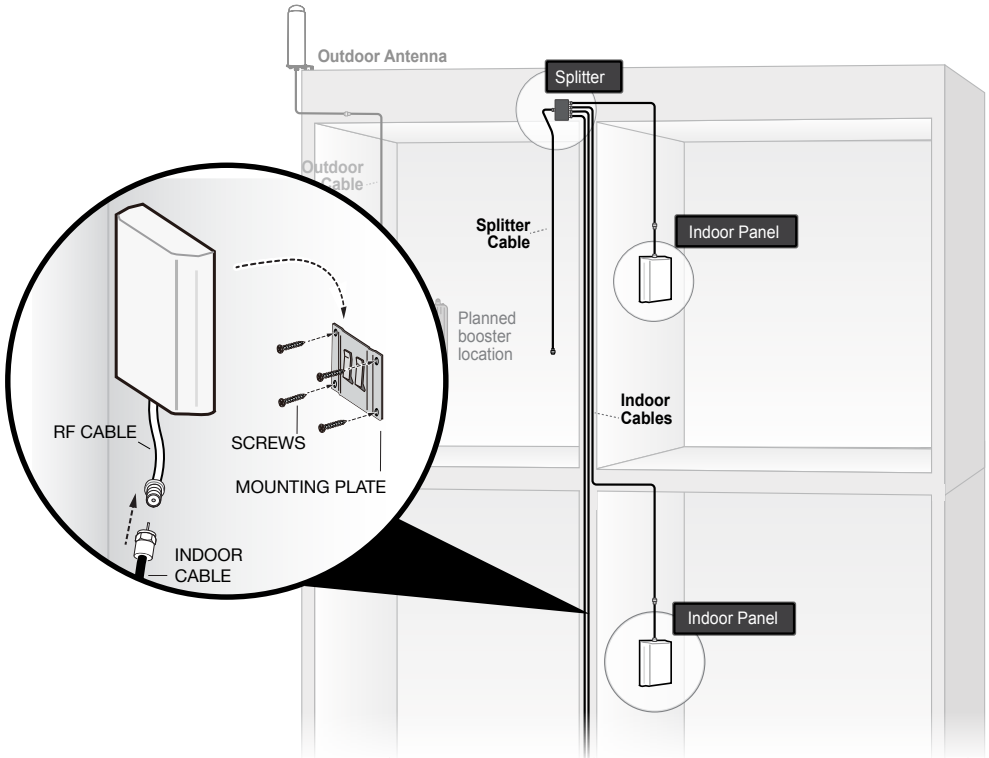
Besides the antenna itself, parts include mounting equipment for a flat horizontal surface. You can also install your interior antenna behind a wall provided there are not materials that could obstruct signals.



### **For Each Indoor Panel Antenna:**

1. Choose location for mounting antenna on vertical surface. Ideal height off the ground or floor should be the approximate height of regular cell phone use.
2. Using plate, mark position of desired screw placement.
3. Screw mounting plate into place with the slide panel protruding towards you.
4. Slide antenna securely onto mounting plate.

*Important: Storage and transportation: Store and place in non-extreme room-temperature and dry environment This antenna should not be used near open fire or flame.*



***For kits with a single indoor antenna:***

4. Connect female antenna connector to the indoor antenna cable(s) provided with your kit and run along route toward the planned location of your booster.

***For kits with multiple indoor antennas:***

5. Connect each indoor antenna to indoor antenna cabling provided with your kit and run along route toward the planned location of your booster. Join all cables to provided cable splitter.
6. Connect one end of the provided cable to the remaining port of the cable splitter labeled INPUT and route cable to the planned location of your booster.

Note: Be sure to provide enough separation from outdoor antenna (at least 50 ft. is recommended).

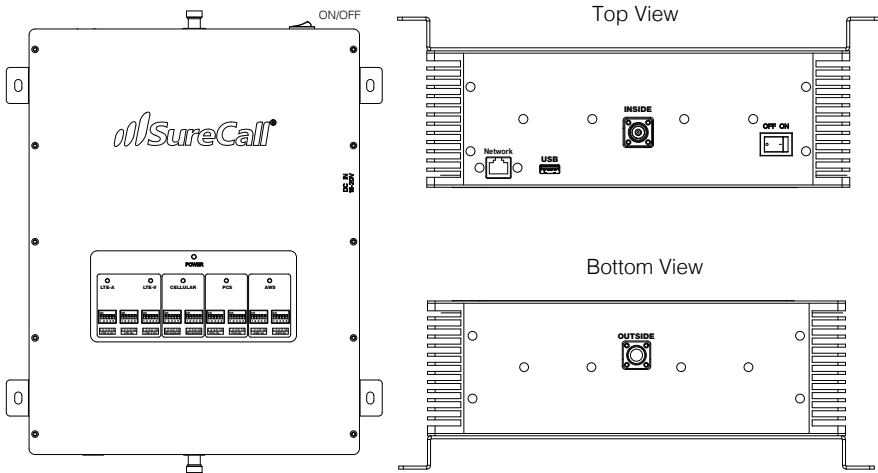
## Step 4. Install the Signal Booster

When placing the booster, select a location close to a working AC outlet. Do not expose the signal booster to excessive heat, direct sunlight, moisture, and airtight enclosures.

1. Mount 24 inch x 24 inch, 3/4 inch thick sheet of plywood on top of sheetrock into wall studs where the booster is to be placed. Plywood should be flush against wall. Once mounted, screw the booster to the plywood sheet. The top side of the booster with the lights and DIP switches should be facing away from the wall and plainly visible standing near the booster.
2. Connect the outdoor antenna cable to the signal booster connector port marked OUTSIDE and tighten the connection.
3. Connect the cable coming from the indoor antenna(s) to the booster port marked INSIDE and tighten the connection.
4. Connect the AC power cord to the signal booster.
5. Connect the plug on the other end of the 110V AC power outlet.
6. Turn the booster's power switch on.

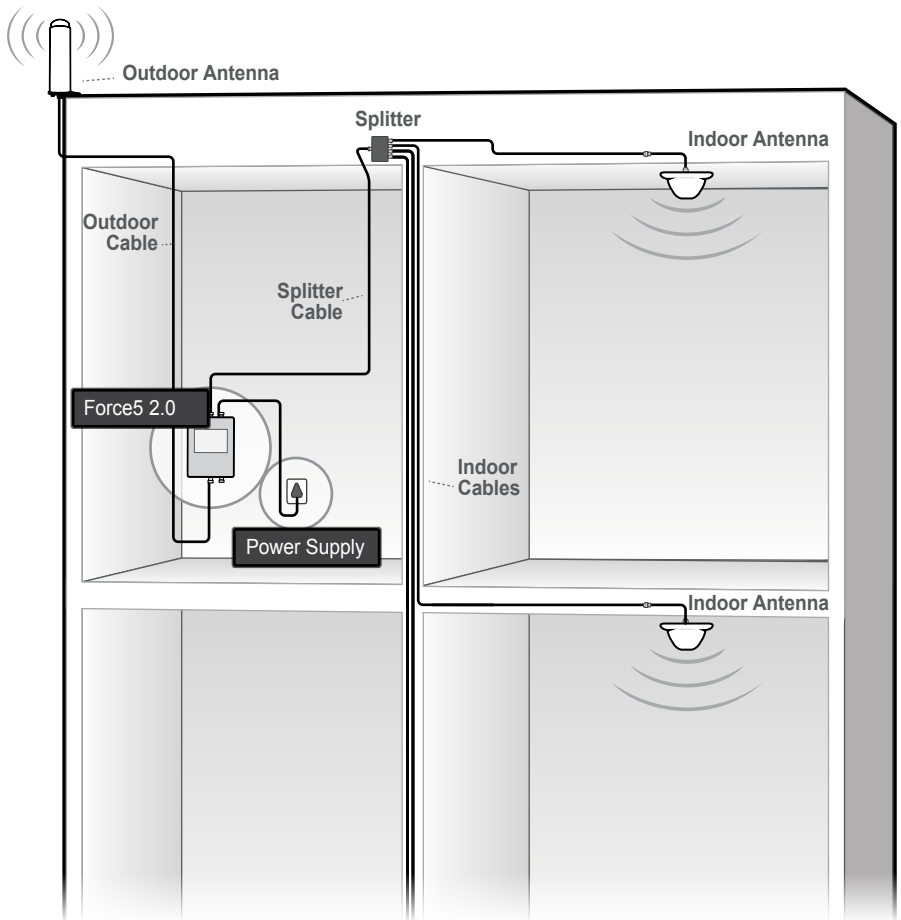
Once the booster is powered on:

- The green Power light should illuminate.
- The band lights will flash red and yellow for approximately 10 seconds.



**Note:** If the Power LED does not turn ON or the Alert LEDs continue to flash, (see “Testing and Troubleshooting” on page 20). This booster is rated for 5-20V input voltage. DO NOT use the booster with a higher voltage power supply. This can damage the booster, cause personal injury and void your warranty.

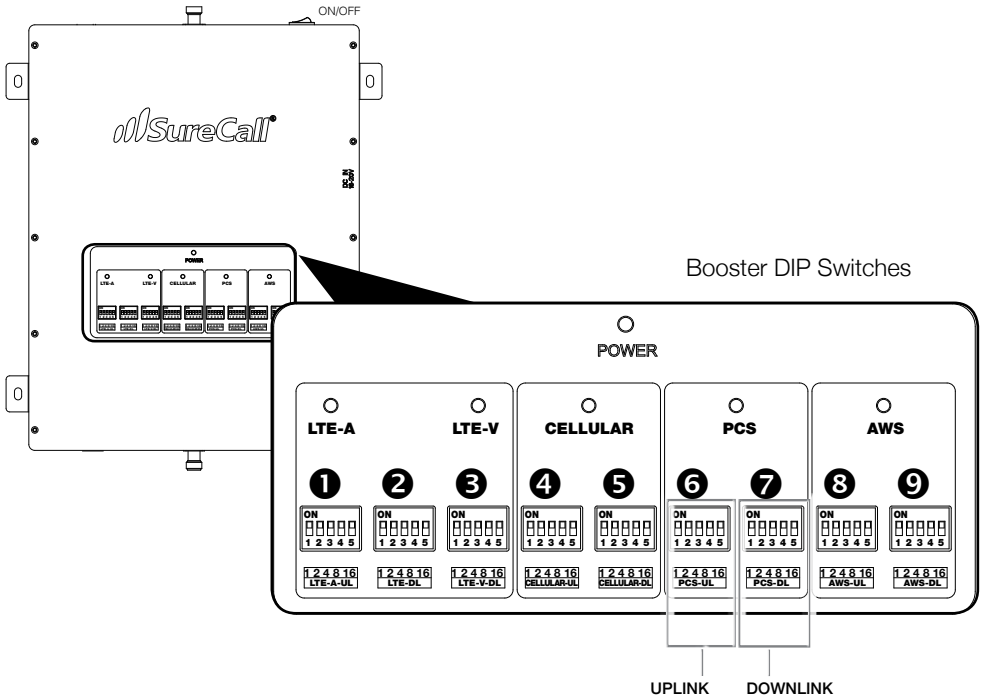




# Booster Controls

## Booster Configuration

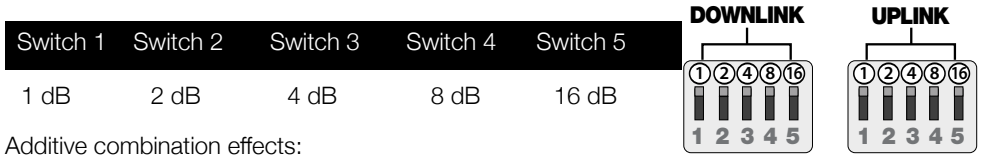
The Force5 2.0 has 9 DIP switches and the frequency bands they utilize for attenuation. Below the image is a general attenuation guide.



## DIP Switch Configuration

By default, your booster ships with all DIP switches turned OFF to provide maximum gain in all channels. This should always be your starting point whenever installing or reinstalling the booster. When the booster is turned on, the band lights will flash red and yellow for approximately 10 seconds.

1. LTE-UL AT&T (707 MHz) DIP switches control LTE uplink (switch 1-5)
2. LTE-DL (728-757 MHz) DIP switches control LTE downlink (switch 1-5)
3. LTE-UL Verizon (781 MHz) DIP switches control LTE uplink (switch 1-5)
4. CELLULAR-UL (800 MHz) DIP switches control Cellular uplink (switch 1-5)
5. CELLULAR-DL (800 MHz) DIP switches control Cellular downlink (switch 1-5)
6. PCS-UL (1900 MHz) DIP switches control PCS uplink (switch 1-5)
7. PCS-DL (1900 MHz) DIP switches control PCS downlink (switch 1-5)
8. AWS-UL (2100 MHz) DIP switches control AWS uplink (switch 1-5)
9. AWS-DL (2100 MHz) DIP switches control AWS downlink (switch 1-5)



Additive combination effects:

Switch 1 (1 dB) + Switch 2 (2 dB) = 3 dB attenuation

Switch 1 (1 dB) + Switch 2 (2 dB) + Switch 3 (4 dB) = 7 dB attenuation

Switch 1 (1 dB) + Switch 2 (2 dB) + Switch 3 (4 dB) + Switch 4 (8 dB) = 15 dB attenuation

Switch 1 (1 dB) + Switch 2 (2 dB) + Switch 3 (4 dB) + Switch 4 (8 dB) + Switch 5 (16 dB) = 31 dB attenuation

## Adjusting Booster Attenuation

By default, all switches are turned OFF, meaning all frequency bands are operating at full gain.

- Turning a switch OFF increases booster gain for the selected channel.
- Turning a switch ON adds attenuation (reduced amplification) for the selected channel.

Switches should remain in the OFF position unless red flashing lights occur for a channel or channels. Red flashing lights indicate that the system has detected oscillation for the corresponding channel(s) and turn off if adjustments are not made.

Keep in mind when adjusting the booster: Full power is not always the best option. Your goal is to obtain a usable cellular signal in as many areas of the building as possible. A successful installation means that you can make calls without dropping and/or have a reliable data connection.

Each bank of DIP switches contain five switches. From left to right, the DIP switches in each bank provide 1, 2, 4, 8, and 16 dB of attenuation (reduced amplification). These switches are cumulative, meaning that the total amount of attenuation for a channel is equal to the combined dB of all ON DIP switches in the corresponding bank.

### A few practical examples:

- Turning all switches OFF = 0 dB attenuation (booster is at full gain).
- Turning ON Switch #1 in a bank = 1 dB attenuation (booster maximum gain is reduced by 1 dB).
- Turning ON Switches #1, 3, and 5 in a bank = 1+4+16 dB attenuation = 21 dB attenuation.
- In an 80 dB booster, this means the selected channel would be reduced to 59 dB (80 dB -21 dB).
- Turning ON all switches in a bank = 1+2+4+8+16 dB attenuation = 31 dB attenuation

In an 80 dB booster, that means that the selected channel would be reduced to 49 dB (80 dB-31 dB).

## Testing and Troubleshooting

In the event you encounter a problem, follow the suggestions below to resolve the issue.

Once the booster is powered on (and no Warning lights are on), walk around the area to assess the voice and/or data signal in representative variety of locations. Refine the antenna locations and/or gain levels as needed, and then complete the permanent installation when you are confident the system will perform well.

**Remember:** Bars are not always a reliable measure of signal. The best way to confirm signal coverage is the ability to place and hold a call.

A few tips and some perspective:

- It's not realistic to expect full reception everywhere in the building.
- As a general rule, increasing gain by 6 dB doubles the coverage distance of the interior antennas. Start at the lowest gain and increase gradually as needed.
- If one or more red Warning lights comes on, it indicates there is oscillation in that band and adjustments are needed.
- If you can't get the coverage reasonably well-balanced, you may need to install an additional interior antenna and/or a different type of interior antenna and/or relocate interior antennas.

Problem	Resolution
Signal booster has no power	Verify that the booster switch is turned on. Connect the power supply to an alternate power source. Verify that the power source is not controlled by a switch that has removed power from the outlet. If the POWER LED on the signal booster remains OFF, contact tech support at: 1-888-365-6283, support@surecall.com, or go to <a href="http://www.surecall.com/support">www.surecall.com/support</a>
After completing installation, indoor signal coverage has not improved	Check the installation of your outdoor antenna. Ensure that the mounting area is clear of obstructions and other radiating elements. Check the outdoor signal strength at the site the outdoor antenna (see instructions on page 7). For kits that use a directional Yagi antenna, verify that the antenna is properly aimed in the direction of your carrier's closest cell tower (see page 8). Verify that all cable connections are tightly fitted to the booster and antennas.

## LED Indications

### Please note the following information:

- As highlighted in the table below, all of the following conditions indicate normal operation: lights off, flashing yellow, or solid yellow.
- Only the presence of red LEDs indicate an unresolved issue.
- The booster gain switches should always be at maximum level unless the control light for a specific frequency band is flashing red or flashing red-yellow. In either case, only reduce gain via switches if other recommended actions do not resolve the issue.
- Avoid exceeding 25 dB of attenuation as this could cause affected frequency band to stop amplifying.

LED Color	LED Condition	Indication
	OFF	Light is off while band is active. <b>This is part of normal operation.</b>
Yellow	Solid	Indicates that the frequency band is not being used. After a period of time, if there's no activity, that band will go into sleep mode. Light is off while band is active. <b>This is part of normal operation.</b>
Yellow	Flashing	Indicates that the Automatic Gain Control (AGC) is self-adjusting. <b>This is part of normal operation.</b>
Red	Flashing	Indicates that the booster is receiving too much signal which could cause the affected frequency band to turn off. If this happens: <ol style="list-style-type: none"> <li>1. For kits using an OMNI outside antenna, relocate the outside antenna to a location where the signal is weaker.</li> <li>2. For kits using a DIRECTIONAL outside antenna, turn the antenna in short increments away from the signal source.</li> <li>3. Add an inline attenuator to the cable coming into the outside port of the booster.</li> <li>4. Though not desirable as amplification will not be optimum, lower the dB gain setting in small increments until the light turns off or flashes yellow.</li> </ol>
Red	Solid	The frequency band is off. If a red light has been flashing for an extended time due to too much signal, that frequency band will display a solid red light indicating that the circuitry for that frequency band has been turned off. If this happens: First, power cycle the booster. If, after power cycling, you observe Red Flashing LEDs, follow the steps outlined for Red Flashing condition until overpowering has been corrected. Note: This may happen if attenuation greater than 25 dB has been made.
Red/ Yellow	Alternately Flashing	Self-oscillation has been detected and to prevent it, one or more of the frequency bands have shut off. If this happens: First, try increasing the vertical/horizontal separation between the outside antenna and inside antennas. If your booster kit uses two directional antennas (examples: outside Yagi antenna or inside panel antenna), ensure that they are facing away from one another (see "Antenna Aiming" on page 9). If condition continues, lower the dB gain setting in small increments until the light turns off or flashes yellow.

## Section 3: Built-in Sentry

For remote monitoring, your Force5 comes with Sentry, SureCall's software that allows users to adjust the attenuation to control:

- Over-Powering
- Oscillation
- Attenuation

### Sentry Configuration

Step 1: Connect the USB cable (provided) to the Booster's USB port then connect the other end of the USB cable to the USB port on your computer. The USB is only needed for configuration and may be disconnected once complete.

Step 2: Connect an Ethernet cable (not provided) to the booster's WAN port and connect the other end to your router.

### Software Installation

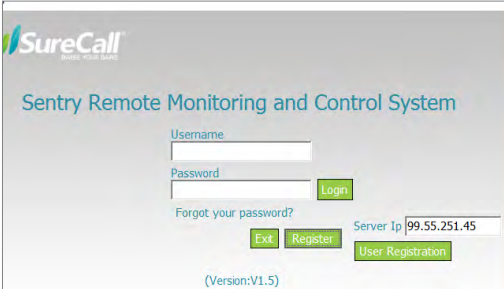
Step 1: Download the software at [surecall.com/support/sentry](http://surecall.com/support/sentry)

Step 2: Install the software on the computer that you will be using for remote monitoring. Run as admin.

Step 3: Enter SureCall's Server IP address, 99.55.251.45 in the Registration Window.

Step 4: Fill in the User Registration form and choose a user name, password, email and user phone. Once completed, click the Register button.

Step 5: Login to Sentry



The screenshot shows the 'Sentry Remote Monitoring and Control System' interface. It features the SureCall logo at the top left. The main heading is 'Sentry Remote Monitoring and Control System'. Below this, there are input fields for 'Username' and 'Password', with a 'Login' button to the right of the password field. A link for 'Forgot your password?' is located below the password field. At the bottom of the form, there are three buttons: 'Exit', 'Register', and 'User Registration'. To the right of the 'Register' button, there is a 'Server Ip' field containing the value '99.55.251.45'. At the very bottom of the interface, the text '(Version:V1.5)' is displayed.



User Registration

User Name

Password

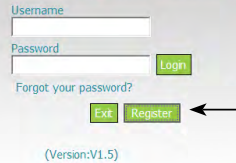
Confirm Password

E-mail

User Phone

Purchased Extension

## Sentry Remote Monitoring and Control System



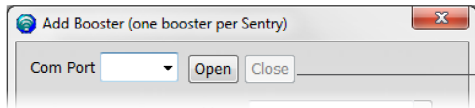
Username

Password

Forgot your password?

(Version:V1.5)

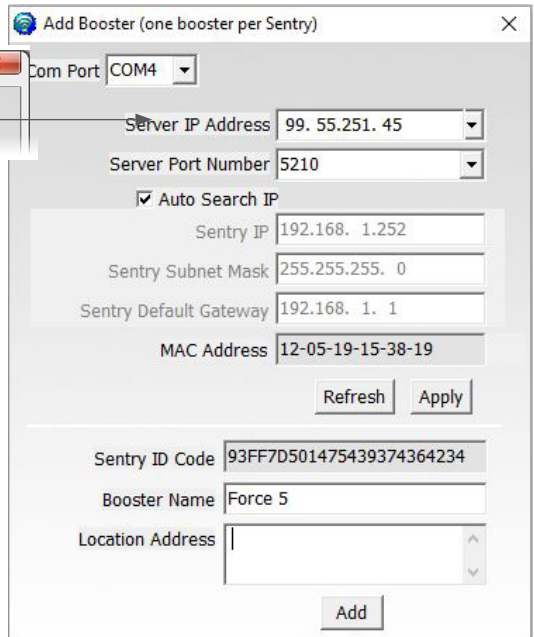
## Select Com Port and Open



Add Booster (one booster per Sentry)

Com Port

- » Once the correct port has been chosen, other fields will autopopulate except for booster name and location address
- » Verify that the server IP address is 99.55.251.45. If not, select the new IP address and click "Apply"
- » Next, enter a Booster Name, a Location Address is optional
- » Once complete, you may click "Add" and close the window



Add Booster (one booster per Sentry)

Com Port

Server IP Address

Server Port Number

Auto Search IP

Sentry IP

Sentry Subnet Mask

Sentry Default Gateway

MAC Address

Sentry ID Code

Booster Name

Location Address

## Sentry Operation

### Adding a Booster

When a booster is connected to Sentry, it will automatically identify the model of the booster and show the corresponding interface.

On the main interface screen, select the booster located in the left column, this will automatically populate the fields with the booster's parameters.

Add Booster
Type: Force5 Name: Force-5 Address: Address

▲ Force 5

Band	Channel	Attenuation	Manual Attenuation	Automatic Gain Control Attenuation	Gain	Output Power	Outside Signal Strength	Uplink/Downlink Status	Band On/Off	Over Power	Oscillation	Over Attenuation
LTE-A	Uplink 598-716M	0 dB	0 dB	0 dB	64 dB	-20 dBm		Active	ON	Normal	Normal	Normal
	Downlink 728-746M	0 dB	0 dB	0 dB	61 dB		-75 dBm	DN	ON	Normal	Normal	Normal
LTE-V	Uplink 776-787M	0 dB	0 dB	0 dB	64 dB	-20 dBm		Active	ON	Normal	Normal	Normal
	Downlink 746-757M	0 dB	0 dB	0 dB	64 dB		-75 dBm	DN	ON	Normal	Normal	Normal
Cellular	Uplink 824-849M	0 dB	0 dB	0 dB	65 dB	-15 dBm		Active	ON	Normal	Normal	Normal
	Downlink 869-894M	0 dB	0 dB	0 dB	65 dB		-75 dBm	DN	ON	Normal	Normal	Normal
PCS	Uplink 1850-1915M	0 dB	0 dB	13 dB	59 dB	-20 dBm		Active	ON	Normal	Normal	Normal
	Downlink 1930-1995M	0 dB	0 dB	4 dB	68 dB		-63 dBm	DN	ON	Normal	Normal	Normal
AWS	Uplink 1710-1755M	0 dB	0 dB	3 dB	68 dB	-17 dBm		Active	ON	Normal	Normal	Normal
	Downlink 2110-2155M	0 dB	0 dB	0 dB	71 dB		-67 dBm	DN	ON	Normal	Normal	Normal

Refresh
Apply
Sentry Software Version: SC-MEI-MONITOR\_V1.6
Connection Status: ● Normal

Total Data: | Data Sent: | Data Received: |

### Using Optional Antenna Placement Tool

This tool aids the installer in locating the best location for an outside antenna.

To test for the best location, the booster and outside antenna must be connected by coax cable.

Place the antenna in a position you'd like to test and click on the measure button.

Antenna Position Debug Tool
✕

Booster: Force-5

Position	Outside Signal Strength					Query Time	Operate
	LTE-A	LTE-V	Cellular	PCS	AWS		
Position1	-55dBm	-61dBm	-44dBm	-49dBm	10:10:16	Measure	
Position2	-61dBm	-67dBm	-49dBm	-54dBm	10:12:22	Measure	
Position3	-66dBm	-71dBm	-53dBm	-56dBm	10:13:19	Measure	
Position4	-71dBm	-75dBm	-59dBm	-63dBm	10:15:54	Measure	
Position5	-75dBm	-75dBm	-64dBm	-68dBm	10:16:41	Measure	

Compare
The Best Position is Position3



This tool will identify the optimum location for the outdoor antenna. The “Position” fields will automatically populate with the dB measurement from various locations by clicking on the measure button at each possible location. You can test up to 5 positions. Once you have entered all locations, click on the “Compare” button to find the best location. Keep in mind that a signal of less than -65 dB can over-power the booster. Aim for a range of -60 to -80 dB. The signal strength can be adjusted to a weaker signal by:

- Moving the outside antenna to a different location
- Adding an inline attenuator to the cable connecting to the booster
- Lowering the dB gain with the DIP switches on the booster or through the Attenuation column in the Sentry

## Configure Gain Settings

### Attenuation:

If the “Over Power” alert is red, the signal coming into the booster from the cellular tower is too strong which will shut down the affected band. There are three possible solutions:

1. Add an inline 5 dB or 10 dB attenuator (parts: SC-ATNR-5 and SC-ATNR-10) to the cable coming into the booster.
2. Relocate the outdoor antenna to a location where the signal is weaker. Or, If using a Yagi outside antenna, turn in small increments away from cell tower until Red alert is resolved.
3. Lower the dB gain in small increments on the Sentry booster dashboard under the Attenuation column until the Over Power alert is resolved.



ATTENUATION THROUGH CLIENT SOFTWARE IS  
CUMULATIVE WITH THAT OF DIP SWITCHES.

# Sentry Operation

Sentry Remote Monitoring and Control System(V1.5)

Tools

Add Booster
Type: Force5 Name: Force 5 Address:

Band	Channel	Attenuation	Manual Attenuation	Automatic Gain Control Attenuation	Gain	Output Power	Outside Signal Strength	Uplink/Downlink Status	Band On/Off	Over Power	Oscillation	Over Attenuation
LTE-A	Uplink 698-716M	0 dB	0 dB	0 dB	64 dB	-25 dBm		Active	ON	Normal	Normal	Normal
	Downlink 728-746M	0 dB	0 dB	0 dB	64 dB		-78 dBm	ON	ON	Normal	Normal	Normal
LTE-V	Uplink 776-787M	0 dB	0 dB	0 dB	64 dB	-24 dBm		Active	ON	Normal	Normal	Normal
	Downlink 746-757M	0 dB	0 dB	0 dB	64 dB		-78 dBm	ON	ON	Normal	Normal	Normal
Cellular	Uplink 824-849M	0 dB	0 dB	0 dB	65 dB	-15 dBm		Sleep	ON	Normal	Normal	Normal
	Downlink 869-894M	0 dB	0 dB	0 dB	65 dB		-82 dBm	ON	ON	Normal	Normal	Normal
PCS	Uplink 1850-1915M	0 dB	0 dB	0 dB	72 dB	-22 dBm		Active	ON	Normal	Normal	Normal
	Downlink 1930-1995M	0 dB	0 dB	0 dB	72 dB		-80 dBm	ON	ON	Normal	Normal	Normal
AWS	Uplink 1710-1755M	0 dB	0 dB	0 dB	71 dB	-19 dBm		Sleep	ON	Normal	Normal	Normal
	Downlink 2110-2155M	0 dB	0 dB	0 dB	71 dB		-83 dBm	ON	ON	Normal	Normal	Normal

Refresh
Apply
Sentry Software Version SC ME1-MONITOR V1.9
Connection Status ● Normal

Total Data: 1    Data Sent: 1    Data Received: 1

Server IP:99.55.251.45    UserName:mark    LoginTime:2016-09-14 08:48:32

## Sentry Dashboard

From the dashboard above you can manually adjust the attenuation dB to resolve problems with oscillation and overpowering issues. You can also turn off individual bands.

### Column Definitions:

**Attenuation:** Adjusts the amount of gain reduction.

**Manual Attenuation:** Indicates the reduced gain through the booster's DIP switches.

**Automatic Gain Control:** Indicates when the booster is automatically reducing the gain due to a strong outdoor signal or close indoor/outdoor antenna proximity.

**Gain:** Indicates the current gain on the amplifier.

**Output Power:** Indicates the power output level of the booster in dBm.

**Uplink/Downlink Status:** Indicates whether a band is asleep, turned on or turned off.



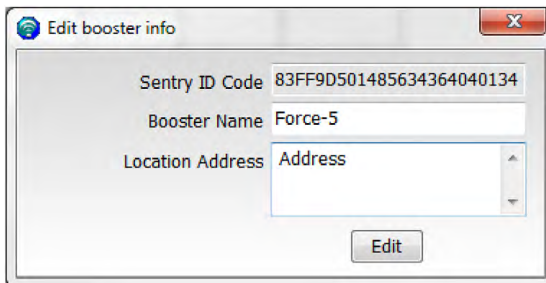
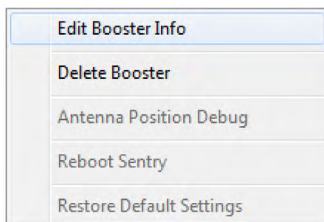
ATTENUATION CAN BE LOWERED TO A MAXIMUM OF 30 OR 31 DB, DEPENDING ON THE BOOSTER MODEL AND A MAX OF 25 DB THROUGH SENTRY SOFTWARE.

## Email Alerts

Email alerts will be sent in the event of booster overpowering, over-attenuation, or if oscillation is detected.

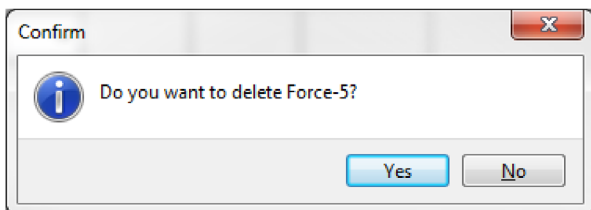
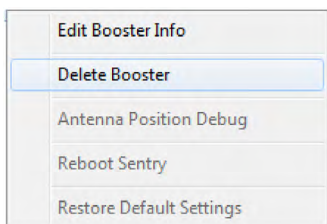
## Changing your Booster Information

If you wish to change your Booster information, click on Edit Booster Info within the left hand navigation



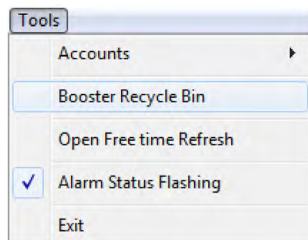
## Deleting a Booster

If you wish to delete a booster in order to add a new one, right click on the specific booster in the left hand navigational field first, then click on "Delete Booster" within the navigation window, click on and confirm the deletion. See below.



## Archiving Booster Information

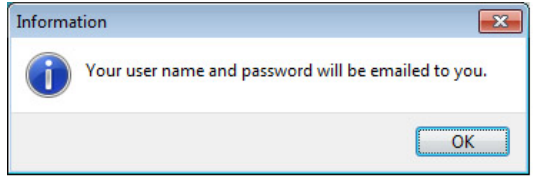
To temporarily change boosters, choose Tools in the top navigation and select "Booster Recycle Bin". Information for this booster will be saved. Should you like to switch back to this booster or delete it, go back to "Booster Recycle Bin" where you will be given the option to restore or delete the booster.



# Sentry Operation

## Forget your Password?

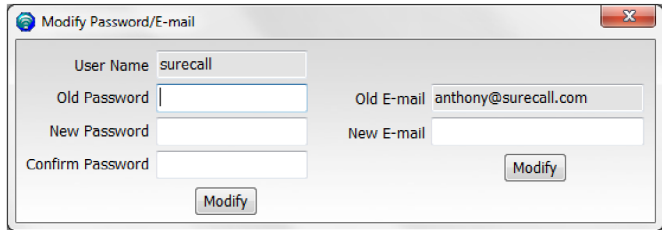
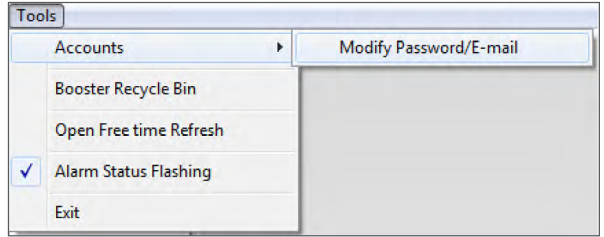
On the login page, type in the email address that you entered when you first registered and click on “Forget your Password”. Your password will be emailed to you.



## Modifying your password:

To change your password, choose Tools in the top navigation and select the Accounts menu and select Modify Password/E-mail from the drop-down menu.

Enter the Old Password, choose a new password, confirm the new password and click on modify.



## Section 4: Specifications

Force5 2.0 Specifications	
Uplink Frequency Range (MHz):	698–716 / 776–787 / 824–849 / 1850–1915 / 1710–1755 (G Block Included)
Downlink Frequency Range (MHz):	728–746 / 746–757 / 869–894 / 1930–1995 / 2110–2155 (G Block Included)
Supported Cellular Standards:	CDMA, WCDMA, GSM, EDGE, HSPA+, EVDO, LTE and all cellular standards
Input Impedance:	50 $\Omega$
Maximum Gain:	Cellular 72 dB
Noise Figure:	5 dB
VSWR:	$\leq 2.0$
AC Input / Output:	Input AC 110 V, 60 Hz / Output DC 15-20 V
Maximum Output Power:	1 Watt EIRP
Cable:	SC-400
RF Connectors:	N Female
Power Consumption:	<65W
Operation Temperature:	-4° F to +158° F
Dimensions:	14.5 x 11 x 3.5 inches
Weight:	23.5 lbs
FCC:	RSNFORCE5S

# Kitting Information

## Kitting Information

Component	Product Number / Description / Note	Gain / Loss				
		LTE-A	LTE-V	Cellular 800 MHz	PCS 1900 MHz	AWS 1700 / 2100 MHz
Outdoor Antenna	SC-288W: Omni	3 dBi	3 dBi	3 dBi	4 dBi	4 / 4 dBi
	SC-288W-L: Omni	5 dBi	5 dBi	6 dBi	8 dBi	8 / 8 dBi
	SC-230W: Yagi	10 dBi	10 dBi	10 dBi	10 dBi	10 / 10 dBi
	SC-510W	5 dBi	5 dBi	7 dBi	10 dBi	10 / 10 dBi
Outdoor Cable	SC-400-30 NN, 30 ft, — Use 30 ft or longer	2.05 dB	2.05 dB	2.12 dB	2.83 dB	2.68 / 2.98 dB
Indoor Cable	SC-400-75 NN, 75 ft, — Use 75 ft or longer	4.22 dB	4.22 dB	4.41 dB	6.17 dB	5.8 / 6.54 dB
Indoor Antenna	SC-222W: Dome	3 dBi	3 dBi	3 dBi	6 dBi	6 / 6 dBi

The Force5 2.0 booster is suitable for use with all equivalent and lower gain antennas and cables

### Included in kit 1

Component	Product	Qty	Notes
Outdoor Antenna	SC-230W: Yagi	1	
Outdoor Cable	SC-400-30 NN, 30 ft	1	Use 30 ft or longer
Indoor Cable	SC-400-20 NN, 20 ft	1	Use 20 ft or longer
Splitter	SC-WS-4	1	
Indoor Cables (to Antennas)	SC-400-75 NN, 75 ft,	4	Use 75 ft or longer
Indoor Antennas	SC-222W: Dome	4	

### Included in kit 2

Component	Product	Qty	Notes
Outdoor Antenna	SC-230W: Yagi	1	
Outdoor Cable	SC-400-30 NN, 30 ft	1	Use 30 ft or longer
Indoor Cable	SC-400-20 NN, 20 ft,	1	Use 20 ft. or longer
Splitter	SC-WS-2	1	
Indoor Cables (to Antennas)	SC-400-75 NN, 75 ft,	2	Use 75 ft or longer
Indoor Antennas	SC-222W: Dome	2	

\*This Force5 2.0 booster is suitable for use with all equivalent and lower gain antennas and cables.

**Important:** Unauthorized antenna cables and/or coupling devices may not be used. Changes or modifications not expressly approved by the Surecall could void the user's authority to operate the equipment.

## Section 5: FCC & Safety Information

SureCall has made a good faith effort to ensure the accuracy of the information in this document and disclaims the implied warranties of merchantability and fitness for a particular purpose and makes no express warranties, except as may be stated in its written agreement with and for its customers. SureCall shall not be held liable to anyone for any indirect, special or consequential damages due to omissions or errors. The information and specifications in this document are subject to change without notice.

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48346 Milmont Drive  
Fremont, California 94538, USA  
888.365.6283  
www.surecall.com

**Important:** Before installing your booster you need to register it with your carrier. You can do so online at the following urls:

Verizon: <http://www.verizonwireless.com/wcms/consumer/register-signal-booster.html>

AT&T: <https://securec45.securewebseesion.com/attsignalbooster.com/>

T-Mobile: <https://support.t-mobile.com/docs/DOC-9827>

Sprint: [https://www.sprint.com/legal/fcc\\_boosters.html](https://www.sprint.com/legal/fcc_boosters.html)

U.S. Cellular: <http://www.uscellular.com/uscellular/support/fcc-booster-registration.jsp>

### FCC Information:

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.

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

**WARNING: E911 location information may not be provided or may be inaccurate for calls served BY USING THIS DEVICE.**

Note: 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. 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.

**15.19** 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.

## Section 6: Product Warranty

### Warranty Periods

Your warranty includes the following periods. Activate your product warranty at [www.surecall.com/activate](http://www.surecall.com/activate)

**Three-Year Product Warranty:** SureCall products are covered under a three-year product warranty from the date of purchase. This protects the customer from any defects or problems the product may have that are solely the fault of SureCall. Incorrect installation or misuse will void this warranty. Upon the return of a defective product, SureCall will issue the customer a working replacement. All returned packages should contain all products distributed.

**Five-Year Extended Product Warranty:** A five year warranty is available for purchase on any products sold by SureCall. A five-year warranty must be obtained at the time of purchase. This warranty adds an additional two years to the three year warranty we provide. All regulations still apply.

SureCall warrants its products for three years from the date of purchase against defects in workmanship and/or materials. Specifications are subject to change. The three-year warranty only applies to products meeting the latest FCC Certification Guidelines stated on 2/20/2013 and going into effect April 30, 2014. A two-year warranty applies to any products manufactured before May 1, 2014.

### Three-Year Product Warranty

Products returned by customers must be in their original, un-modified condition, shipped in the original or protective packaging with proof-of-purchase documentation enclosed, and a Return Merchandise Authorization (RMA) number printed clearly on the outside of the shipping container.

Buyers may obtain an RMA number for warranty returns by calling the SureCall Return Department toll-free at 1-888-365-6283. Any returns received by SureCall without an RMA number clearly printed on the outside of the shipping container will be returned to sender. In order to receive full credit for signal boosters, all accessories originally included in the signal booster box must be returned with the signal booster. (The Buyer does not need to include accessories sold in addition to the signal booster, such as antennas or cables.)

This warranty does not apply to any product determined by SureCall to have been subjected to misuse, abuse, neglect, or mishandling that alters or damages the product's physical or electronic properties.

SureCall warrants to the Buyer that each of its products, when shipped, will be free from defects in material and workmanship, and will perform in full accordance with applicable specifications. The limit of liability under this warranty is, at SureCall's option, to repair or replace any product or part thereof which was purchased up to THREE YEARS after May 1, 2014 or TWO YEARS for products purchased before May 1, 2014, as determined by examination by SureCall, prove defective in material and/or workmanship. Warranty returns must first be authorized in writing by SureCall. Disassembly of any SureCall product by anyone other than an authorized representative of SureCall voids this warranty in its entirety. SureCall reserves the right to make changes in any of its products without incurring any obligation to make the same changes on previously delivered products.

As a condition to the warranties provided for herein, the Buyer will prepay the shipping charges for all products returned to SureCall for repair, and SureCall will pay the return shipping with the exception of products returned from outside the United States, in which case the Buyer will pay the shipping charges.

The Buyer will pay the cost of inspecting and testing any goods returned under the warranty or otherwise, which are found to meet the applicable specifications or which are not defective or not covered by this warranty.

Products sold by SureCall shall not be considered defective or non-conforming to the Buyer's order if they satisfactorily fulfill the performance requirements that were published in the product specification literature, or in accordance with samples provided by SureCall. This warranty shall not apply to any products or parts thereof which have been subject to accident, negligence, alteration, abuse, or misuse. SureCall makes no warranty whatsoever in respect to accessories or parts not supplied by it.

### Limitations of Warranty, Damages and Liability

EXCEPT AS EXPRESSLY SET FORTH HEREIN, THERE ARE NO WARRANTIES, CONDITIONS, GUARANTEES, OR REPRESENTATIONS AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHER WARRANTIES, CONDITIONS, GUARANTEES, OR REPRESENTATIONS, WHETHER EXPRESSED OR IMPLIED, IN LAW OR IN FACT, ORAL OR IN WRITING.

SURECALL AGGREGATE LIABILITY IN DAMAGES OR OTHERWISE SHALL NOT EXCEED THE PAYMENT, IF ANY, RECEIVED BY CELLPHONE-MATE, INC. FOR THE UNIT OF PRODUCT OR SERVICE FURNISHED OR TO BE FURNISHED, AS THE CASE MAY BE, WHICH IS THE SUBJECT OF CLAIM OR DISPUTE. IN NO EVENT SHALL SURECALL BE LIABLE



FOR INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES, HOWSOEVER CAUSED.

All matters regarding this warranty shall be interpreted in accordance with the laws of the State of California, and any controversy that cannot be settled directly shall be settled by arbitration in California in accordance with the rules then prevailing of the American Arbitration Association, and judgment upon the award rendered may be entered in any court having jurisdiction thereof. If one or more provisions provided herein are held to be invalid or unenforceable under applicable law, then such provision shall be ineffective and excluded to the extent of such invalidity or unenforceability without affecting in any way the remaining provisions hereof.

48346 Milmont Drive  
Fremont, California 94538, USA  
888.365.6283  
[www.surecall.com](http://www.surecall.com)