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Thank you for purchasing SureCall's Fusion5s cellular signal booster kit. Fusion5s was specifically designed to eliminate frustrations over dropped calls, limited range and slow data rates by amplifying incoming and outgoing cellular signals up to 35,000 square feet.

The Fusion5s provides enhanced cellular signals for multi-carrier voice and 4G data reception. If you have any questions while assembling this kit please contact tech support at 1-888-365-6283 or email us at: support@surecall.com.

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SureCall's Fusion5s is a high-quality bidirectional signal booster that enhances cellular signals to areas that are prone to weak cellular coverage.

Fusion5s works with two antennas:

- An inside antenna that communicates with your cell phone.
- An outside antenna that communicates with the cell tower.

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



Package Contents

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

Standard Fusion5s signal booster packages include the following items:

Package Contents

Your booster box contains the following items:

• (1) Fusion5S booster Booster and power supply

Additional Items Needed

The booster requires the following additional components for a complete installation:

- An outside antenna, such as the SC-230W Yagi antenna or SC-288W omni antenna
- Sufficient low loss 50 ohm interior/exterior cable
- Cable splitter if installing multiple antennas
- Grounded surge suppressor for DC power supply
- Multiple antennas (such as the SC-222W-TNC, omni-directional domes by SureCall)



Package Contents

Antenna Options

Antenna Type	Model No.	Usage Coverage	
Omni Outdoor Antenna	SC-288W	Omni antennas are ideal for topographies with minimal obstacles, they have 360° reception	
Yagi Outdoor Antenna	SC-230W	Yagi antennas are designed to reach carrier towers that are up to 30 miles away	
Dome Antenna	SC-222W	Dome antennas are designed for central locations with 360° coverage	
Panel Antenna	SC-248W	Panel Antennas allow optimum reception to targeted areas	

Note: Due to the recent change of our company name from Cellphone-Mate (CM) to SureCall (SC) we have changed the prefix on all of our antennas, cables and accessories from CM to SC-.

Before You Install

- Step 1. Make sure you have positioned the booster close enough to an existing electrical outlet.
- Step 2. Make sure you have sufficient cable length between proposed outside antenna location and booster connector.
- Step 3 Make sure you have sufficient cable length between proposed inside antenna location and booster connector. Additional cable may be purchased from your dealer, if needed.

Installation Overview

- Step 1. Find the outside area that has the strongest signal.
- Step 2. Install the outside antenna in the area identified in step 1.
- Step 3. Install the inside antennas.
- Step 4. Mount the signal booster, connect the outside and inside antenna cables to the signal booster, and connect the booster to an AC power source.



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.

Step 1. Find the area 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 to test your 3G and 4G data rates.
- Measure the strength of the existing cellular signal in various locations.

If you have an omni outside antenna and your signal is too weak you may need a yagi antenna, which can be aimed at the closest antenna tower. Before installing the outside antenna, find the area with the strongest cellular signal source from your service provider by following the directions below. You can also go to *www.antennasearch.com* to find the general location of carrier towers.



Step 2. Install the Outdoor Antenna

A <u>directional Yagi antenna</u> works best when facing the direction of the nearest cellular tower being used by your carrier

An **<u>omni antenna</u>** receives and sends signals in a 360° radius.

Before proceeding, please note:

For both antenna options, mount the outside antenna in the location identified in step 1 and as high as possible.

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" .

Always orient directional antennas to point away from other system antennas (see illustration, "Antenna Aiming").

Note that if the mounting area is prone to weak cellular signals or if dense building materials partially block the signal, the booster will operate at its default gain setting.

Antenna Aiming



Antenna Separation



Outdoor/ Indoor Antenna Separation

A minimum of 75ft. 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.

Installing 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.

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.

Once the outside antenna is secured to a pipe or pole, connect antenna to cable connector of end of the 75 ft. length of cable and run along route to planned location of your booster.



Installing an 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.

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

Mount antenna to a vertical surface:

- 1. Using vertical plate of bracket, mark position of desired placement. The omni antenna should be mounted in an upright position (See "Outside Antenna Assembly" on page 9)
- 2. Unscrew nut from end of stucco screw and remove it along with lock washer and regular washer.
- 3. Place vertical plate into desired location and tap the screws, head first, along with sleeve, into stucco 1/2 to 5/8 inches deep into place.
- 4. 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.
- 5. Remove screws from antenna base and use to secure antenna onto horizontal plate.
- 6. Connect antenna to end of cable and run along route to planned location of your booster.



Step 3. Install the Indoor Antenna(s)

- For indoor dome antennas, mount on a ceiling in a central location where signal is needed.
- For indoor panel antennas, mount on a wall or surface facing the area where signal is needed. These directional antennas should always point away from the outdoor antenna. To avoid interference, retain a minimum distance of 3 feet from panel antennas.

For any antenna type, the range of antenna is dependent on these factors:

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

Installing Dome Antenna(s)

Besides the antenna itself, parts include mounting equipment for either a flat horizontal surface or a wall. It should be mounted in an upright position for best results. You can also install your interior antenna above the ceiling panel provided there are not materials that could obstruct signals.

For Each Indoor Dome 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. Connect antenna to an indoor cable (1 per antenna) of and run along route to planned location of your booster's cable splitter.
- 4. Once all indoor antennas and cables are in place, connect cable runs from indoor antennas to the splitter ports.
- 5. Use cable to connect to open end of the cable splitter and run to the planned location of your booster.

Note: Be sure to provide enough separation from outdoor antenna (at least 75 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.









Installing Panel Antenna(s)

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. Besides the antenna itself, parts include mounting equipment for a flat horizontal surface. You can also install your interior antenna behind a wall or above a ceiling panel 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 with pencil or marker.
- 3. Screw mounting plate into place with the slide panel protruding towards you.
- 4. Slide antenna securely onto mounting plate.
- 5. Connect antenna to an indoor cable (1 per antenna) of and run along route to planned location of your booster's cable splitter.
- 6. Once all indoor antennas and cables are in place, connect cable runs from indoor antennas to the splitter

ports.

7. Use cable to connect to open end of the cable splitter and run to the planned location of your booster.

Note: Be sure to provide enough separation from outdoor antenna (at least 75 ft. is recommended).

Step 4. Install the Signal Booster

- 1. Select a location close to a working AC outlet. Do not expose the signal booster to excessive heat, direct sunlight, moisture, and airtight enclosures.
- 2. If you'd like to mount the booster to a wall, mark location of screw tabs on the wall in the desired location
- 3. Use supplied screws or appropriate screws for surface of mounting location and drill through screw tab holes on booster.
- 4. Connect the outside antenna cable to the signal booster connector marked **OUTSIDE**. Hand-tighten the connection.
- 5. Connect the inside antenna cable to the signal booster connector marked **INSIDE**. Hand-tighten the connection.
- 6. Connect the AC power cord to the signal booster.
- 7. Connect the plug on the other end of the 110V AC power outlet.
- 8. Turn the booster's power switch on.

Booster Hardware

The following image shows the key hardware components on the cellular booster. Refer to this image as you install your Fusion5s kit components.



LED Indicators

Please note the following information:

- The booster gain dials or 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 dials or switches if other recommended actions do not resolve the issue.
- As highlighted in the following table, 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 dials 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 turning the gain all the way down as this could cause affected frequency band to stop amplifying.

LED Color	LED Condition	Indication			
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. This is part of normal operation.			
Yellow	Flashing	Indicates that the Automatic Gain Control (AGC) is self-adjusting. This is part of normal operation.			
Red	Flashing	Indicates that the booster is receiving too much signal which could cause the affected frequency band to turn off. If this happens:			
		1. For kits using an OMNI outside antenna, relocate the outside antenna to a location where the signal is weaker.			
		2. For kits using a DIRECTIONAL outside antenna, turn the antenna in short increments away from the signal source.			
		3. Add an inline attenuator to the cable coming into the outside port of the booster.			
		 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. 			
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 8).			
		If condition continues, lower the dB gain setting in small increments until the light turns off or flashes yellow.			
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 can also happen when the gain dial for a frequency band has been turned all the way down.			

Troubleshooting

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

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 is OFF, return the power supply to SureCall. Contact tech support to receive an RMA at:
	1-888-365-6283 or support@surecall.com, or go to www.surecall.com 7:00 am – 5:00 pm PST, Monday – Friday to chat with a representative.
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 7).
	Verify that all cable connections are tightly fitted to the booster and antennas.
	0 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.



If you Want to Improve Coverage

- 1. Find a location that receives a stronger signal and relocate the outside antenna to that location.
- 2. Increase the distance between the outside and inside antennas.
- 3. Be sure your signal booster's dB gain is turned up to maximum gain on each dial.

Specifications

698–716 / 776–787 / 824–849 / 1850–1915 / 1710–1755 (G Block Included)
728–746 / 746–757 / 869–894 / 1930–1995 / 2110–2155 (G Block Included)
50 Ω
78.5 dB
8 dB
CDMA, WCDMA, GSM, EDGE, HSPA+, EVDO, LTE and all cellular standards
Input AC 110 V, 60 Hz / Output DC 12 V
3 Watt EIRP
SC-400
N Female (both ends)
<25W
-4° F to +158° F
9.25 x 6.375 x 1.375 inches
3 lbs
7784A-FUSION5HP

Kitting Information

Kitting Information

Component	Product Number / Description	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-230W: Yagi	10 dBi	10 dBi	10 dBi	10 dBi	10 / 10 dBi
Outdoor Cable	SC-240-40 ft FN, Use 40 ft or longer	3.52 dB	3.52 dB	3.98 dB	6.52 dB	6.12 / 6.92 dB
	SC-400-75 ft, NN, Use 75 ft or longer	4.22 dB	4.22 dB	4.41 dB	6.17 dB	5.8 / 6.54 dB
Indoor Cable	SC-240-20 ft, FN, Use 20 ft or longer	2.06 dB	2.06 dB	2.29 dB	3.56 dB	3.36 / 3.76 dB
	SC-400-30 ft, NN, Use 30 ft or longer	2.05 dB	2.05 dB	2.12 dB	2.83 dB	2.68 / 2.98 dB
Indoor Antenna	SC-222W: Dome	3 dBi	3 dBi	3 dBi	6 dBi	6 / 6 dBi
	SC-248W	7 dBi	7 dBi	7 dBi	10 dBi	10 dBi / 10 dBi

The Force5S Canada booster is suitable for use with all equivalent and lower gain antennas, as well as, equivalent or greater lengths of cable.

Frequency (MHz)	Bandwidth (MHz)	Input (dBm)	Mean Power (dBm)	Gain (dB)
Uplink: 1710-1755	72.0	-56.4	22.1	78.5
Uplink: 1850-1915	70.0	-46.4	21.0	67.4
Uplink: 824-849	34.2	-46.0	21.2	67.2
Uplink: 698-716	26.7	-45.5	23.8	69.3
Uplink: 777-787	23.6	-47.1	21.7	68.8
Downlink: 2110-2155	78.5	-56.8*	20.0	76.8
Downlink: 1930-1995	73.5	-50.9	17.3	68.2
Downlink: 869-894	36.8	-50.8	17.3	68.1
Downlink: 728-746	34.3	-49.1	19.8	68.9
Downlink: 746-756	35.3	-46.0	20.5	66.5

*Input power level is decreased before reaching AGC-0.5 dB to maintain compliance with the intermodulation product of -13 dBm.

Mean power: Measurements obtained on section 6.2 where Pmean = P01+3 dB

Three-Year Product Warranty

Register at www.SureCall.com

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.

Products returned by customers must be in their original, un-modified condition, shipped in the original or protective packaging with proofof-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.

IC and 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

Industry Canada

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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Industry Canada:

This Class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. 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

Cet appareillage numérique de la classe B répond a toutes les exigencies de l'interférence canadienne causant des réglements d'équipment. L'opération est sujette aux deux conditions suivantes: (1) ce dispositif peut ne pas causer l'interférence nocive, et (2) ce dispositif doit accepter n'importe quelle intérference reçue, y compris l'intérference qui peut causer l'opération peu désirée.

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.

La puissance de sortie nominale indiquée par le fabricant pour cet appareil concerne son fonctionnement avec porteuse unique. Pour des appareils avec porteuses multiples, on doit réduire la valeur nominale de 3,5 dB, surtout si le signal de sortie est retransmis et qu'il peut causer du brouillage aux utilisateurs de bandes adjacentes. Une telle réduction doit porter sur la puissance d'entrée ou sur le gain, et ne doit pas se faire au moyen d'un atténuateur raccordé à la sortie du dispositif

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