CELL PHONE SIGNAL BOOSTER

USER MANUAL

SOLVE SIGNAL PROBLEMS
AND IMPROVE QUALITY OF LIFE

admin@szzj-tech.com
www.szzjtechnology.com

CATALOG

- INTRODUCTION 1
- WHAT IS INCLUDED FOR THE KIT 2
- SPECIFICATIONS 3
- HOW IT WORKS 4
- LCD SCREEN INTRODUCTION 10
- HOW TO INSTALL YOUR SIGNAL BOOSTER 10
- INSTALLATION OVERVIEW 12
- 1.1 Install Outdoor Antenna 15
- 1.2 Install Indoor Antenna 16
- 1.3 Install Signal Booster 16
- SAFETY GUIDELINES 19
- PRODUCT WARRANTY 20

INTRODUCTION

This series booster has been sold offline for a very long time and has won unanimous praise from customers. It can enhance indoor signal, such as voice, data in home and office etc, so as to reduce the problem of call interruption, poor signal, can help improve voice quality, faster internet speed and wider coverage.

It also has an advanced set of technical features, will give you the ultimate control over your signal quality. Wireless connects multiple devices, Automatic gain control, this booster has strong anti-interference, low noise characteristic,Works on bands 5/12/13/17, Support all US and Canadian carriers of AT&T, Verizon, T-Mobile, Sprint, Straight Talk, U.S. Cellular, etc. Cover 2G, 3G, 4G LTE, and 5G compatible.

WHAT IS INCLUDED FOR THE KIT

It can cover up to 2500sq.ft coverage.

SPECIFICATIONS

Electrical specification		Uplink	Downlink
Frequency Range (700+850Mhz)	LTE(A&B)	698~ 716 MHz	728 ~746 MHz
	LTE (C)	776~ 787MHz	746 ~757 MHz
	CDMA	824~849 MHz	869~894MHz
Max Gain		≥65dB	≥65dB
Max Output Power		≥22dBm	≥10dBm
Band width		Wide Band	
MGC function		≥ 31dB/1dB step	
Intermodulation Products	9KHz~1GHz	≤ -19dBm	≤ -19dBm
	1GHz~12.75GHz	≤ -19dBm	≤ -19dBm
Spurious Emission	9KHz~1GHz	≤ -36dBm	
	1GHz~12.75GHz	≤ -30dBm	
Gain Flatness		≤8dB	
Noise Figure		≤6dB	
VSWR		≤2	
Group Delay		≤ 1.0μs	
Frequency stability		≤ 0.01ppm	
LED Alarm		Standard	
Power LED		Power Indicator	
ALC LED		Orange @ ALC 1~5dB, Red @ ALC15dB~20dB,	
Mechanical Specifications		Standard	
I/O Port		SMA-Female	
Impedance		50 ohm	
Operating Temperature		-25℃~+55℃	
Environment Conditions		IP40	
Dimensions		11.1*10.9*22mm/5.16*3.5*0.866in	
Weight		0.2kg/0.441Lb	
Power Supply		Input AC100~240V,output DC5V/2A	

Kit Including:
Cell Phone Signal Booster*1
5G Outdoor Log-periodic antenna *1
Indoor whip antenna*1
50ft Cable*1

HOW IT WORKS

Working Principle:

Outside Signal: Receive the signal from the outdoor base station signal tower

Outdoor Antenna Gain: The gain of outdoor antenna

Outdoor Cable Loss: The loss of the outdoor cable

Booster Gain: The actual working gain of the booster

Indoor Cable Loss: The loss of the indoor cable

Indoor Antenna Gain: The gain of indoor antenna

The coverage area and the strength of the boosted signal are directly related to two key factors:

1. Signal strength received by the outdoor unit. So, setting up the outside unit where the signal is the strongest will provide the best results.

2. Distance of separation between the outdoor unit and the indoor unit.

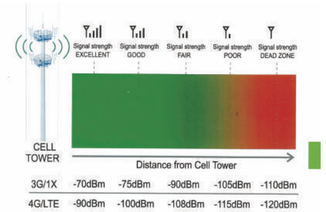
3. Please make sure the horizontal distance between outdoor antenna and indoor antenna is more than 6 meters(20ft);The vertical distance between indoor antenna and outdoor antenna is more than 3 meters(10ft)

For example:

-65dBm + 6dBi - 5dB + 70dB - 3dB + 6dBi = 9dBm (System Output Power)

Tips:The user guide is focused on:
1. Getting the best outside signal.
2. Keeping the maximum booster gain.

Signal transmission loss and power level



Coverage area ability

Note: FCC regulations limit the amplification of all cell phone boosters in order to prevent damage to the telecommunications infrastructure. Therefore, the maximum coverage area of a booster depends on the original power level of the signal captured by the outdoor unit.
Notice: Not recommended when outdoor signal strength is less than -110dbm (3G/lx) or -120dBm(4G/LTE). The resulting coverage area of the boosted signal will be prohibitively small.

Power Level at the outdoor antenna location	Coverage Area (sq.ft)
Strong(4~5 bars on the cellphone)	2,500
Medium(3~4 bars on the cellphone)	1,000
Weak(1~2 bars on the cellphone)	300

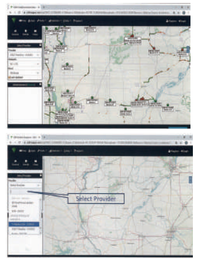
Preparation

Find your cell tower nearby!
There are a variety of resources available online, here is a third party website recommended. Use it to locate your nearest cell tower. **www.cellmapper.net**

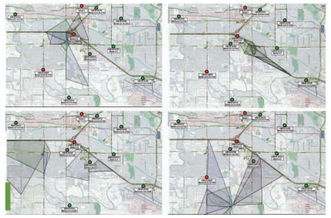
Step 1. Visit website www.cellmapper.net

Step 2. Find your location on the map and zoom in on your area

Step 3. Select Provider. You will find the cell tower around your house.

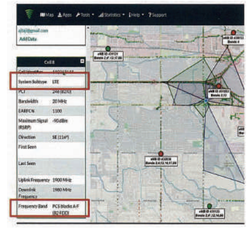


Step 4. Find your cell tower



Click the red or green dot on the map that represents the base station, and the detailed information of the base station will be displayed.

- The first important information, you can see from the above four pictures, the coverage area (shaded part) of each base station is different. You have to find a base station with signal coverage to your house, or the coverage direction is facing you, and the coverage area is closest to you.
- The second important information, you can scroll the information content on the right to find the specific carrier information of this base station, including the communication standard and frequency band. Please reference the right picture, "LTE+ and "B2 FDD"(Band 2, FDD).



How to choose the right booster before purchase?

For iPhone - Please dial *3001#12345#* → Press call button
→ Click 'Serving Cell Info' → Check 'Freq Band Indicator'.
For Android - Please download 'LTE Discovery' APP
→Click 'SIGNALS' → Check 'EARFCN'.

LCD SCREEN INTRODUCTION

The strength of the outdoor input signal

①Very Strong(it will have 5 bars, the red bar also lights up)

②.Strong(it will have 5 bars),

③.Medium(about 3~4 bars),

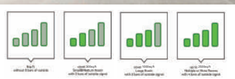
④.Weak(only have 1~2 bars),

HOW TO INSTALL YOUR SIGNAL BOOSTER

This user manual will help you properly install your signal booster kit.
It is important to read through all of the installation steps before installing your equipment.
Thoroughly read through the instructions, visualize where all the equipment will need to be installed and do a soft installation by placing the devices where they need to be before mounting any equipment.

① Outdoor antenna
② Cable
③ Indoor Antenna
④ Booster

Note: The booster requires 1-2bars reliable signal outdoor, we recommend you to test your signals outdoor on your mobile phone before purchasing.
Here are the effects of different signals for your reference.



INSTALLATION OVERVIEW

Step 1. Find the outside area with the strongest signal.

Step 2. Install the outside antenna on the roof to obtain the strongest downlink signal from the local cellular towers. It should also be as far away as possible from where you plan to place the indoor antenna.

Step 3. Install the indoor antennas where you want to improve the signal level.

Step 4. Mount the boost; connect the cables from the outdoor antenna and indoor antenna at the designated ports, or place the Flare on a table or desktop, center of the area where signal is needed.

Step 5. Connect the booster to an AC power source.
(make sure all the cables are connected tightly before applying power)

There are tools required before installation as follows FYI:

Tools Required

Phillips Screwdriver | Drill | Mobile Phone

Test Installation

We STRONGLY recommend doing a test installation before finalizing the installation. Doing a test installation of your cell phone booster ensures that you will get the optimal performance from your system.

Step 1. Select the Location for the Outside Unit

Note:This is the most critical step and will determine the overall performance of the booster system.

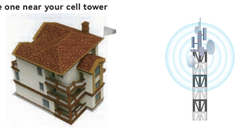
1. Generally, the strongest signal will be located on the side of your home facing the nearest cell tower. Keep in mind, the signal strength at ground level may be different from the signal strength at or above the roof line due to obstructions (trees, other buildings, etc.) that block the incoming signal.

In most situations, the strongest signal is found about 25 feet above the ground on the side of your home facing the nearest cell tower.

2. The most ideal installation position is the corner of the building, choose the one facing your cell tower.

Four corner of the building are the most ideal position

choose the one near your cell tower



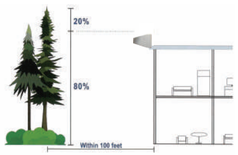
Step 2. Temporarily Mount the Outside Antenna

In addition to the four corners of the building, the chimney and the pole above the roof can also be selected, As long as the installation distance between in door and outdoor antennas is maintained enough, satisfactory results can also be achieved.
Use one of the three options to mount the outside antenna on your roof on the side of the house with the strongest signal.
The height of the outside antenna should never exceed the highest point of your house. This is a precaution against damage and safety concerns caused by lightning strikes to the outside unit.

A Outdoor antenna must be installed over the roof line.

Caution

Trees will greatly attenuate wireless signals. If there are tall trees within 100 feet of the house. At the same time you can not find a stable signal above 3 bars, the outdoor antenna needs to be erected 60%(at least) to 80% (best) of the tree height, Never exceed the trees!
But according to FCC regulations, outdoor antenna height cannot exceed 30 feet.
At the same time, if the antenna exceeds the roof, please pay attention to lightning protection measures.



1.1 Install Outdoor Antenna

IMPORTANT: Testing the signal 3 times in the desired location before installing the outdoor antenna will help ensure the clearest and most stable signal for phone calls and data transmission.

Installation Method 1:

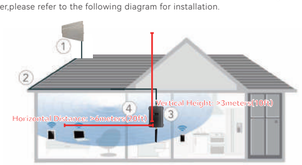
1. Determine the installation position of the Yagi antenna according to the range to be covered, the antenna is suitable for more than 3 meters from the ground, effectively avoiding ground objects and obstructions, and directed to the location of the base station, the higher it is installed, the better the effect

2. Confirm the location, you need to fix the antenna with a U-shaped bolt on the installation pole, usually the antenna's small teeth face upward, in order to play the reception effect

3. Connect antenna to one end of the provided cable and tighten the connection, Run the cable along route to planned location of your booster

1.2 Install Indoor Antenna

Please directly connect the indoor antenna to the indoor port of the signalboost-er,please refer to the following diagram for installation.



step1 step2 step3

1.3 Install your signal booster

Place the booster in a central location where signal is needed and at least 50ft. from the outdoor antenna location. And the signal booster should be mounted in an easily accessible area so it's easy to perform general maintenance. The optimal area would be on a wall located near a power outlet. Mount the booster with the included screws as shown in the figure below.

The booster will be installed as below steps:

1. Secure both sides of the unit with screws and mount it on the wall.

3. Connect the cable of the indoor antenna to the port on the side of the booster silk-printed INDOOR

4. Route the cable from the outside antenna inside and connect it to the port on the booster silk-printed OUTDOOR

5. Connect the power adapter cord to the signal booster and plug into the power outlet. The LCD Screen will light and functioning properly

Note:

1. Do NOT connect the power adapter to the Signal Booster until you have connected both the Inside and Outside Antennas.

2. The booster case may become warm during operation, this is normal, please don't worry.

FCC Certification:

Power listed is conducted at antenna terminals. The antennas used with the signal booster must be installed to provide a separation distance of at least 20cm from all persons. Users and installers must be provided with the antenna kitting and installation and operating instructions and conditions for satisfying RF exposure and Section 20.21(a) compliance.
This Wideband Consumer Signal Booster is authorized only for operation by and marketing to members of the general public for their personal use in accordance with the requirements of Sections 20.21(a)(7) and 20.21(g). This device is a Wideband Fixed Consumer Signal Booster approved for operating with the coverage/server antenna installed at a fixed location inside a building.

How to choose the right booster before purchase?

Step 1. Check band number. Make sure your band number belongs to one of the following: band 5/12/13/17. If not, then this booster is not the best choice for you.

Step 2. Check incoming signal level at outdoor antenna position.
Usage of a booster is not recommend when the outdoor signal is than -110dbm(3G) or-120dBm(4G).
Which means Please make sure that you can receive at least 1-2bars signal at the location you plan to install the outdoor antenna.

Safety Guidelines

To uphold network protection standards and ensure compliance, all active cellular devices must maintain a separation distance of at least six feet between the inside unit antenna and outside unit antenna and at least four feet of separation distance from the inside unit. Use only the power supply provided in this package. Use of a non-Amsignalbars product or accessory may result in damage to the equipment or comp orients of the equipment. The in side unit is designed for use in an indoor, temperature-controlled environment (less than 100 degrees Fahrenheit). It is not intended for use in attics or similar locations where temperatures may be in excess of that range.
RF Safety Warning: Any antenna used with this device must be located at least 8 inches from all persons.

SAFETY GUIDELINES

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.
In Canada, **BEFORE USE** you must meet all requirements set out in ISED CPC-2-1-05. 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 (i.e., **MUST NOT** be installed within 20 cm of) any person.
You **MUST** cease operating this device immediately if requested by the FCC (or ISED in Canada) or 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 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 Amsignalbars could void the authority to operate this equipment.

FOR MORE INFORMATION ON REGISTERING YOUR SIGNAL BOOSTER WITH YOUR WIRELESS PROVIDER, PLEASE SEE BELOW:

Sprint:	http://www.sprint.com/legal/fcc_boosters.html
T-Mobile/MetroPCS:	https://support.t-mobile.com/docs/DOC-9827
Verizon Wireless:	http://www.verizonwireless.com/wcms/consumer/register-signal-booster.html
AT&T:	https://securec45.securewebsession.com/attsignalbooster.com/
U.S. Cellular:	http://www.uscellular.com/uscellular/support/fcc-booster-registration.jsp

PRODUCT WARRANTY

IC Certification:

The signal booster is compliance with the requirements of the standards ICES-003 applied

PRODUCT WARRANTY

30-Day Money-Back: All boosters are protected by a 30-day money- back guarantee. If for any reason the performance of any product is not acceptable, the product may be returned to the reseller with a dated proof of purchase.

3-Year Warranty boosters and kits are warranted for 3 years. 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.

Complete list of authorized antennas, cables, and cable loss:

Outdoor Antenna			
Outdoor Antenna	Outdoor Antenna Gain		
	Lower 700MHz	Upper 700MHz	Celluler
Outdoor LPDA Antenna	7.0	7.0	7.0
Indoor Antenna			
Indoor Antenna	Indoor Antenna Gain		
	Lower 700MHz	Upper 700MHz	Celluler
Indoor Whip Antenna	5.0	5.0	5.0
Outdoor Cable			
Outdoor Cable	Outdoor Cable Loss		
	Lower 700MHz	Upper 700MHz	Celluler
15 m 3D-FB cable	3.9	4.3	4.5

FCC Warning

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 inte rference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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 interferenceto 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.

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

Warning label requirements

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.

1) Warning: The Inside Antennas for fixed installations must have 6 feet of separation distance from all active users.
2) Warning: The Outdoor Antennas/Indoor Antennas for fixed installations must be installed no higher than 10 meters above ground.
3) Warning:Unauthorized antennas, cables, and/or coupling devices are prohibited by FCC rules.Please contact FCC for Details:1-888-CALL-FF.
4) Warning:The antenna,cable,and other accessories of the booster kits shall not be modified without the approval of the party responsible,others it shall be deemed invalid.