HiBOOST® Boost Your Bars

User Manual

Home Mobile Signal Booster

15K Smart Link（F20G-5S-IOT）

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(972) 870-5666
service@hiboost.com
www.hiboost.com

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Package Content

15K Smart Link

Outdoor antenna

50ft Outdoor cable

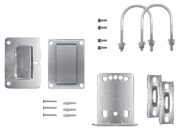
Bluetooth and
Wi-Fi antenna

Booster

50ft Indoor cable

Indoor antenna

Power supply



Other Accessories

3M waterproof tape
to protect connections

NOTE: Available accessories can be purchased through HiBoost.com

Warning: Un-authorized antennas, cables, and/or coupling devices are prohibited by new FCC rules. Please contact FCC for details: 1(888)-CALL-FCC

Authorized Accessories List

Outdoor Antenna & Cable Kit Options

Outdoor antenna AR698-2700V8i60A 698-960/1710-2700MHz 8/9dBi
Outdoor cable Hiboost400/8D 50ft/15.2M

Indoor Antenna & Cable Kit Options

Indoor antennaAI698-2700V09iB 698-960MHz/1710-2700MHz 6.5/8.5dBi
Indoor cable Hiboost400/8D 50ft/15.2M

Introduction

Thanks again for purchasing HiBoost cell phone Booster. The Smart Link series is a collection of precision-engineered products that improve cellular reception inside of homes and businesses by amplifying incoming and outgoing cell phone signals.

HiBoost cell booster's exclusive cloud-based Signal Supervisor mobile application and LCD display allow users to monitor the live status of HiBoost cell phone signal boosters directly from the LCD display or remotely from a mobile device anywhere at any time.

If there are any issues while installing a HiBoost 4K/10K/15K Smart Link Signal cell phone signal booster, please contact the HiBoost technical support team through the following

Online Support: Create a ticket or chat via Signal Supervisor App

(972) 870-5666 (M-F from 9 am – 5 pm CST)
service@hiboost.com
www.hiboost.com

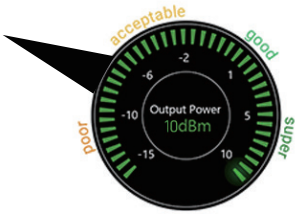
Pre-Installation Instructions

We strongly recommend you to read the user guide completely before beginning the installation.

HiBoost SmartLink booster provide 2 options of booster installation,
APP and LCD installation ways are unique methods provided by HiBoost.
This installation guide will take the HiBoost 4K SmartLink as an example.

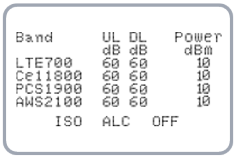
1. App assisted installation,
FIRST CHOICE From Page 09~22.
It's more convenient and many work could be done by ONE person, and the most important is that the obtained signal can be very precise.

The App helps you find the best signal outside



2. LCD assisted installation,
SECOND CHOICE From Page 23~35.
It can achieve the same precise effect as App guidance.
But it may need two people and the installation process is a little cumbersome.

LCD signal meter tells how strong the signal is



Then why has HiBoost spent extra big efforts and costs to design APP and LCD signal meters to help you install?

Out of the various reasons, the most important reason is that we would like you, our valuable client, to get the maximum output power from the booster system in order to get optimal signal reception for all your mobile devices.

As it is known and a big thanks, FCC makes signal boosters legal in 2014 so that every body can install and benefit from the signals;

But FCC regulations do limit the gain and output power of all consumer boosters to low values in order to avoid any interference to the cell towers;

Furthermore FCC stipulates that any improper install should trigger immediately further reduction of the booster's already-limited gain and power to protect the towers.

Therefore, you can understand how important you need to find the perfect outside signal from the tower and how important to squeeze every last gain and power from the booster, even 1dB more power is so precious when you suffer from no signals.

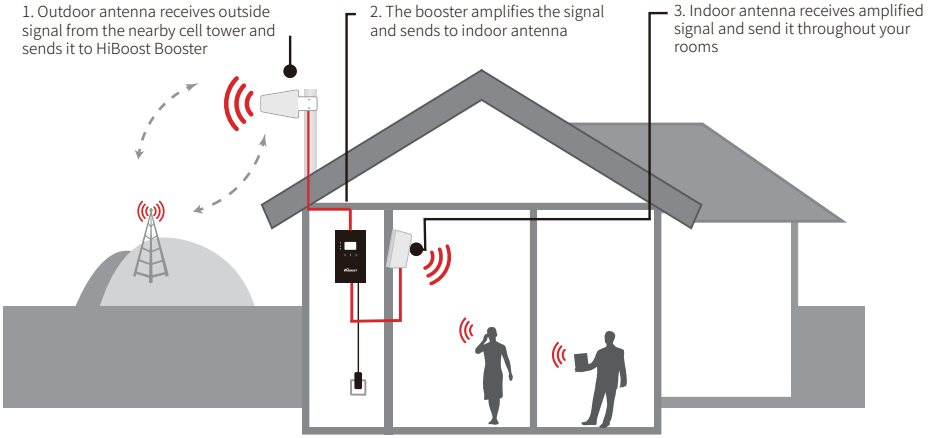
HiBoost App & LCD signal meters will help you to fine tune the best power and get as much cover of your spaces.

General Working Principle:

Before we start any of the two ways, please allow us to spend 3 pages to make you understand how the booster system works for you.

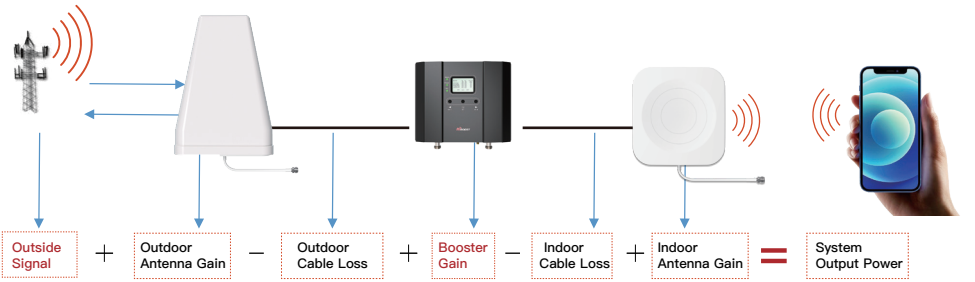
※ Please do spend sometime to read it fully, as it is crucial to get full bars for your rooms.

How HiBoost booster works



Vice versa, indoor antenna receives cellphone signal and sends to the booster
The booster then amplifies the signal and sends it to outdoor antenna
Outdoor antenna sends signal to the cell tower
Then you can make phone calls and internet streaming.

Working Principle in Formula



Out of the Formula:

Outside Signal: To be received by outdoor antenna from cell 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

For example:

-65dBm + 11dBi - 4.5dB + 60dB - 2dB + 7dBi = 6.5dBm (System Output Power)

Since the figures in **Black** color are fixed when you finish the purchase, thus the **RED** figures of

1. Outside Signal

2. Booster Gain will play a vital role in reaching the best output power during the install, especially when we know the FCC limits the booster system values.

So the user guide is focused on:

1. Getting the best outside signal.
2. Keeping the maximum booster gain.

More notes on how to keep the maximum booster gain

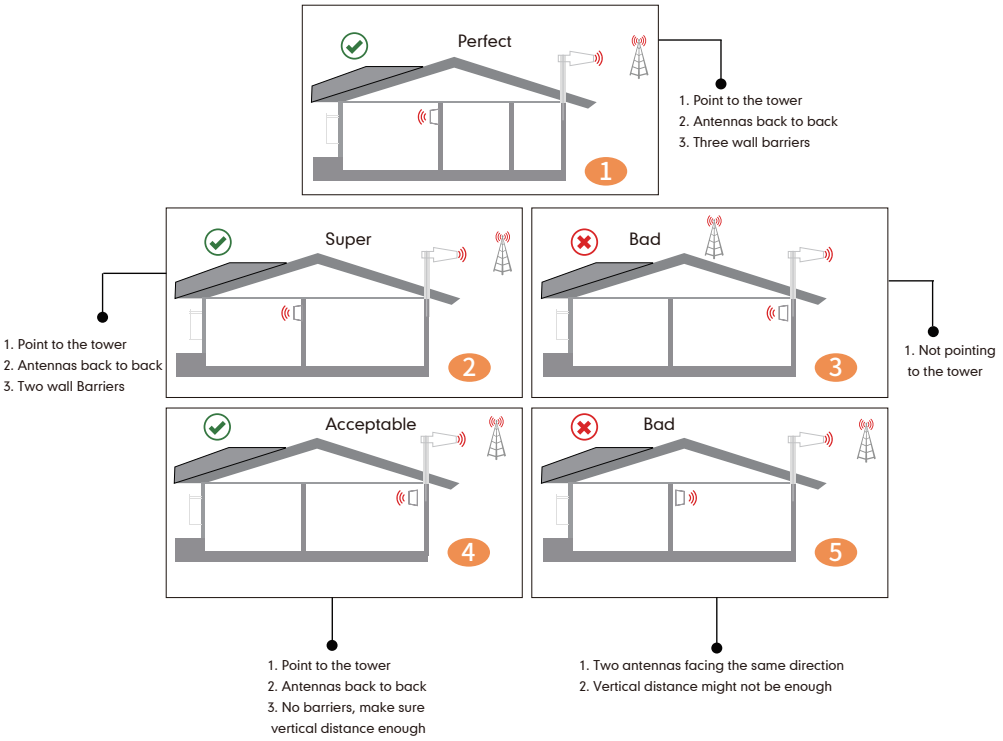
The loop back from the outdoor antenna to the indoor antenna will reduce the gain, so the principle to keep the maximum booster gain is to avoid the loop back from the outdoor antenna to the indoor antenna.

1) Increase the distance between the outdoor and indoor antenna, generally the same vertical distance generates more loss than horizontal, and to follow easily, a Typical Required Distance Between Outdoor and Indoor Antenna Over 30 feet (10 meters) horizontal distance or 13 feet (4 meters) vertical distance.

2) The outdoor and indoor antennas shall be back to back.

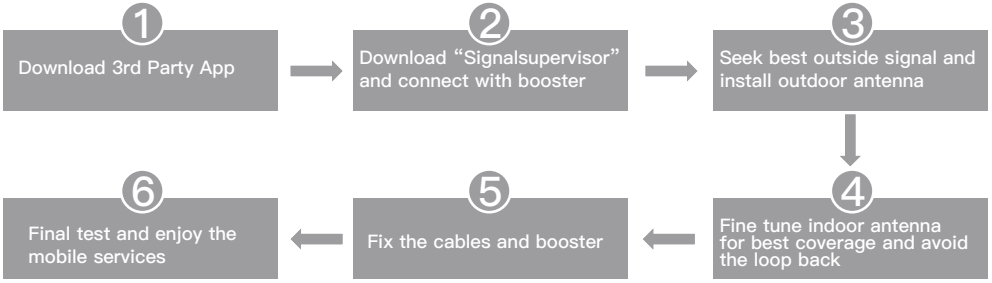
3) Use barriers between the indoor and outdoor antenna.

※ Please note: This separation is not an absolute mandate. The idea is to isolate the outdoor antenna from the indoor antenna.



APP Assisted Installation

Flow chart of APP Assisted Installation



Step 1: Download the 3rd Party Mobile apps

We are going to use 3rd party apps:

- To find the cell tower location
- To test the signal strength and quality

There are a variety of resources available online: Opensignal,Cell mapper, Network cell info lite, etc.

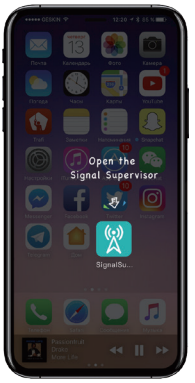
Please download them beforehand over Android and / or iOS:

※ You can use either of them to your favor. Here we are using Opensignal and Network Cell Info Lite as first two choices.

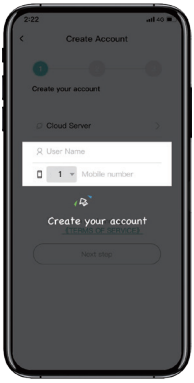
Step 2: Download Signal Supervisor app and connect the booster

Download the Signal Supervisor app, register ID and booster.

1) Search “Signal Supervisor” on Google Play/ App Store, or scan the above QR Code to download.
2) Register on the Signal Supervisor app.
3) Switch on the booster.
* Connect the Bluetooth/WiFi antenna with booster, and there is no need to connect outdoor or indoor antenna at this moment.
4) Click “Add Device” to register the booster into the APP. And we recommend WiFi connection because the Bluetooth connection can’t go beyond 30ft.Check more steps about the app uses as below.


Open the
Signal Supervisor

1


Create Account
Create your account
Cloud Server
User Name
Mobile number
Create your account
Next step

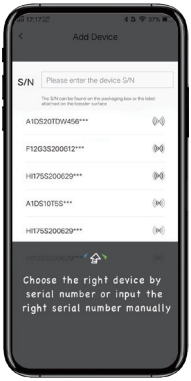
2


My Device
No data
click "Add Device"
Add

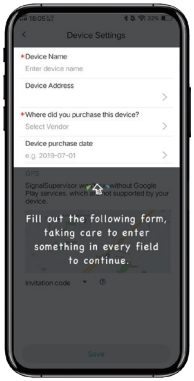
3


Add Device
Select an option to add your device
Scan for Bluetooth devices
Enter the Serial Number
Click to select

4


Add Device
S/N
Please enter the device S/N
A1DS20TDW456***
F12G3S200612***
HI175S200629***
A1DS10TS5***
HI175S200629***
Choose the right device by
serial number or input the
right serial number manually

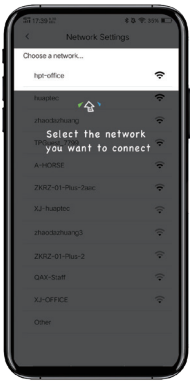
5


Device Settings
*Device Name
Enter device name
Device Address
*Where did you purchase this device?
Select Vendor
Device purchase date
e.g. 2019-07-01
Fill out the following form,
taking care to enter
something in every field
to continue.
Invitation code
Save

6


Device Setup
Configuring a WiFi Connect
Click to select
Configuring a WIFI Connect
NO WIFI Network

7


Network Settings
Choose a network...
hipt-office
Select the network
you want to connect
A-HORSE
ZKRZ-01-Plus-2aac
XJ-haptec
ZKRZ-01-Plus-2
QAX-Staff
XJ-OFFICE
Other

8

Remark: Due to the phone types and the WiFi router types, there are few cases though rare that the booster won't be linked successfully to the signal supervisor app, even after our technical support. In such case:

* Please kindly switch to use LCD signal meter to assist your install and will have the same result. And Bluetooth/WiFi disconnection won't influence the booster working status at all.
* Or please use different phone or change your WiFi router if you really want remote monitor.

Please contact our tech support and we will see what the best arrangements can be for you.

Step 3: Look for best outside signal and install outdoor antenna

The performance of the booster system is heavily dependent on the successful installation of the outdoor antenna

3.1 Connect the booster with outdoor antenna

(1) Put the booster near to the location you would like to install in the future, or a place with power outlet temporarily.

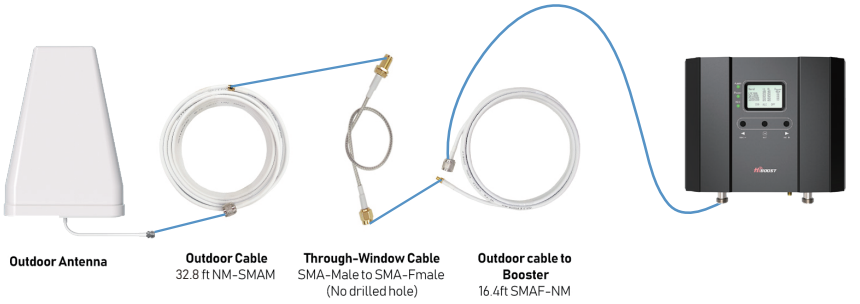
(2) Keep the booster connected with Bluetooth/WiFi antenna.

(3)Switch on the booster and make sure the signal supervisor app links with it smoothly.

(4)Connect the 16.4ft cable with the booster's outdoor port. The booster supports hot plug.

(5) Then connect the window cable with 16.4ft cable and pull the window cable outside and connect it with 32.8ft cable. In case window cable is not needed, connect the 16.4ft cable with 32.8ft cable directly.

(6) Connect the other side of 32.8ft cable with the outdoor antenna.

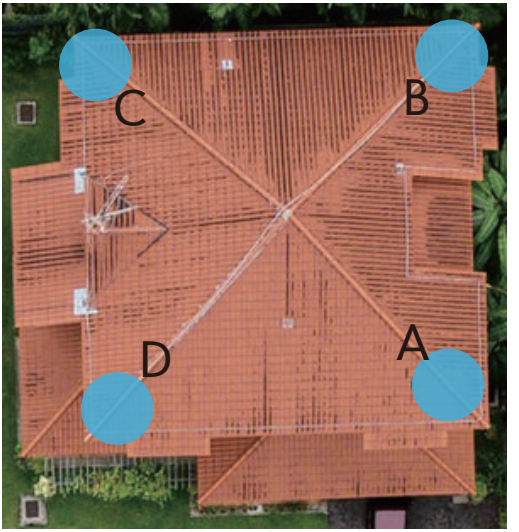


*HiBoost 15K SmartLink can be directly connected to the outdoor antenna with the 50ft NM-NM cable.

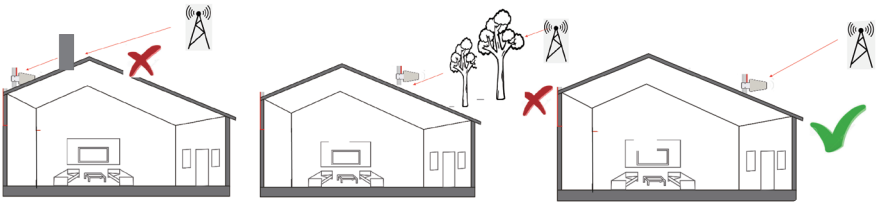
Notes:
* It is a must **NOT** to connect indoor antenna at this moment as it will influence the outside signal finding.
* Please place the booster outdoor within 30ft to the possible location of outdoor antenna if there is only Bluetooth connection. This is to ensure the App links to the booster.

3.2 Select the possible location for best outside signal.

Bring your mobile phone with the APPs and the outdoor antenna to the location where the best outside signal can be found. The outdoor antenna is recommended to be at the four corners or high end of the roof, or attic.



The outdoor antenna needs to maintain a clear line of sight with the cell tower. And it is necessary to avoid the roof or other stuffs from blocking the outdoor antenna.



3.3 Use 3rd party APP to locate the tower(s)

Now open “Opensignal”, use it to detect the approximate position of the nearby cell tower.

(1)Insert your detail address in “Search city” box. (following figure 1)

(2)Enter signal dashboard, and click “CELL TOWERS”. Then zoom in map to find best one, it will show a blue line with your place which means your cellphone connected one. (following figure 2&3)

(3)When you find such location, check the strength, test voice and data speed. A good signal shall not only be strong, but also be clear in voice and fast in data speed. (following figure 4-6)

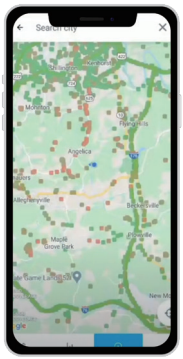


Figure 1

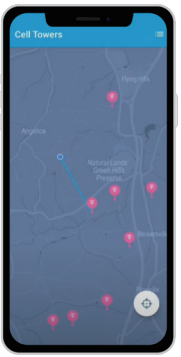


Figure 2

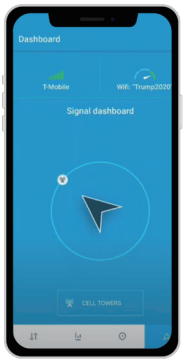


Figure 3

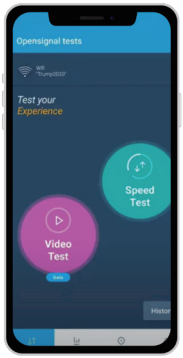


Figure 4

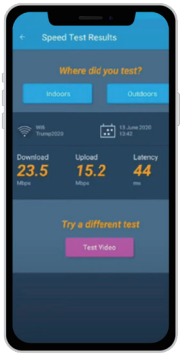


Figure 5

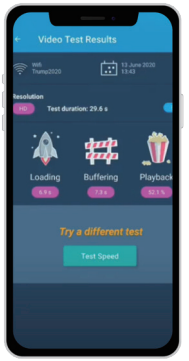


Figure 6

You can also use the “Network Cell Info Lite” to locate the tower and measure the signal strength before & after install.
The good point of Network Cell Info Lite is that you can see the signal levels.
But it seems to be only available for Android.

Network Cell Info Lite

The signal strength requested by the booster system is as below.

SIGNAL STRENGTH	EXCELLENT	GOOD	FAIR	POOR	DEAD ZONE
3G/1X	-70dBm	-70 to -85dBm	-86 to -100dBm	-101 to -109dBm	-101dBm
4G/LTE	-90dBm	-90 to -105dBm	-106 to -110dBm	-111 to -119dBm	-120dBm

Your signal strength is going to be a good indicator of how fast you can download and stream, but for voice, it’s more like “Can I make a call, or not?” If you can make a call you should not care how many bars you have, as long as the call goes through and everyone can hear everyone. Looking at bars is just going to make you cranky.

The reason to test your internet speed is to make sure you'll be able to stream high-bandwidth movies, like those from Netflix, Hulu, Amazon, and other providers. If your internet speed is too slow, you'll get choppy video or regular buffering.

3.4 Look for the best location and direction of outdoor antenna

After the tower is located, please pick up outdoor antenna and point to the tower and adjust its direction precisely.
Watch the signal gauge of Signal Supervisor App as it will show the booster's best output power when you get the strongest outside signal.

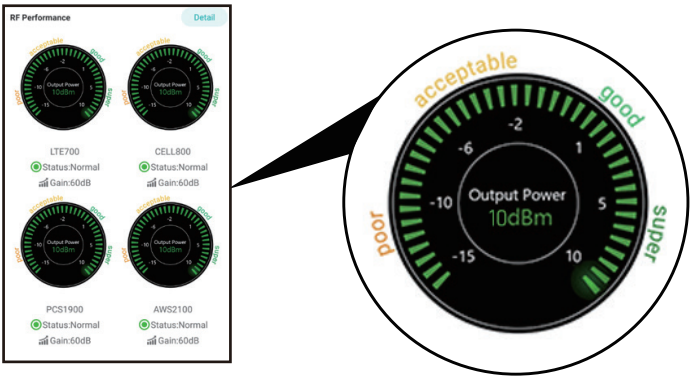
Target: Try to get the highest possible output power for each band and try to make 2-3 gauges turn green.

1) You can either look at the signal meter value, 10dBm is the best

2) Or you can look at the signal description, Super is the best

Notes: The output power level in the signal meter is the level for the indoor antenna.

Fix the outdoor antenna direction when you get the best output power.

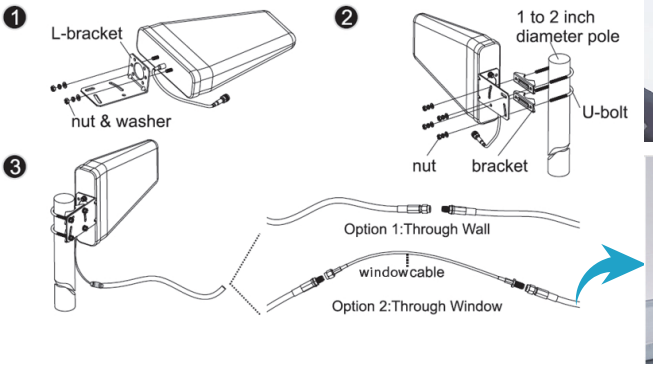


Professional Tips

- Keep in mind that it is normal for the output values may vary dynamically between 1-3 dB
- To optimize the signal for one carrier, point the outdoor antenna towards the closest cell phone tower designated to that carrier
- To optimize the signal for more than one carrier, point the outdoor antenna between multiple towers
- Make sure to slowly turn the antenna while taking the readings so the booster has time to adjust the reading
- Test and install the antenna at the same height where power outputs and gain values reach the booster's maximum capacity
- **If you can't get a good output power, which is even below poor, most probably the install will fail. Either please find a new place to find good signal again, or drop the install.**

3.5 Fix outdoor antenna

Now install the outdoor antenna firmly

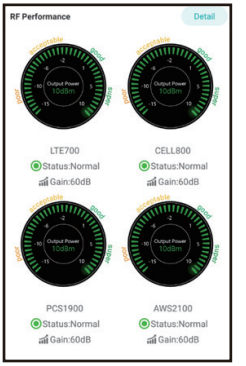


The connector of the cable connection part must be glued with black waterproof tape to prevent long-term signal drop and reduce signal loss!

3.6 Reconfirm that the signal on signal gauge is the best!

Please **do take following screen shot** for future comparison during indoor antenna install.

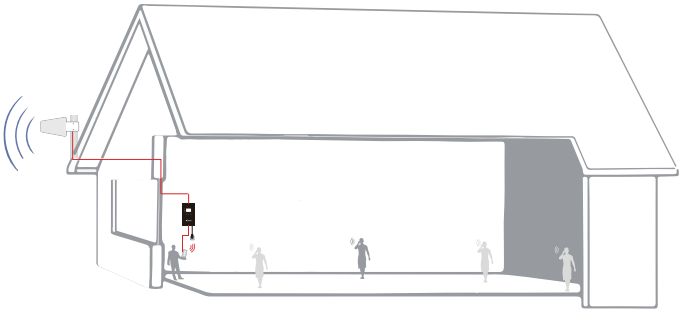
What you are going to be paying attention to here, is the gain values. If you have interference between your indoor and outdoor antennas, then the booster will lower the gain and these values will decrease.



Step 4: Install the indoor antenna

4.1 Now it's turn to install the indoor antenna

Note: It is better to have two people at this stage. One can go around to find the best place for indoor antenna. While the other can walk around to make tests all over to make sure every spot is covered with stable and high quality signal.

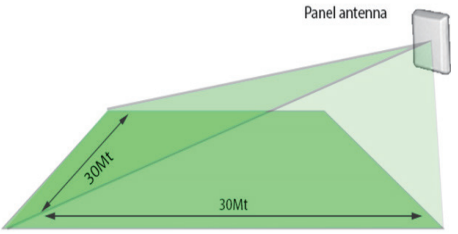


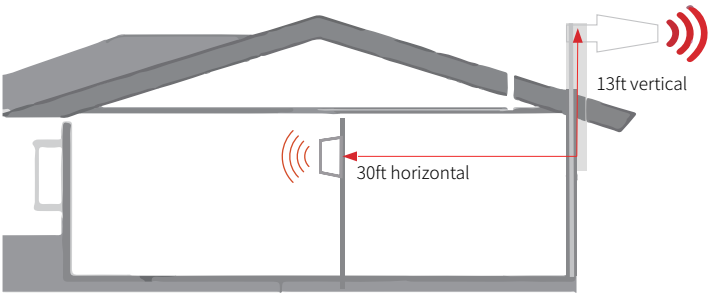
4.2 Connect the indoor antenna with the booster's indoor port by indoor cable, and switch on the booster.

Note : Cellphone are to be used more than 1m away from the Indoor Antenna

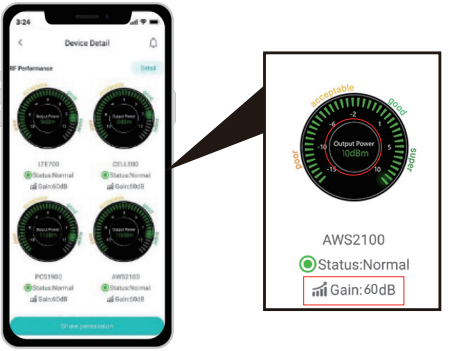
4.3 Find the proper location for indoor antenna

1) Determine the location according to the antenna's radiation pattern. The radiation pattern is 80° horizontal and 70° vertical. So try to make sure the space will fall into its radiation pattern.





2) After finding the location, hold it there, and watch the gain and power on the App's signal gauge, they shall keep the same or very nearby with the screen shot taken during outdoor antenna install. This is to avoid the loop back between outdoor and indoor antennas, please move the indoor antenna till you get unchanged or slightly changed gain and power. This step is quite crucial for the booster's best performance.



Two requests of indoor antenna install
A. Radiation shall be good enough to cover whole space
B. Loop back shall be avoided

Again the tips to avoid the loop back

1. Increase the distance between the outdoor and indoor antennas
2. The outdoor and indoor antennas shall be back to back
3. Use barriers between the indoor and outdoor antennas