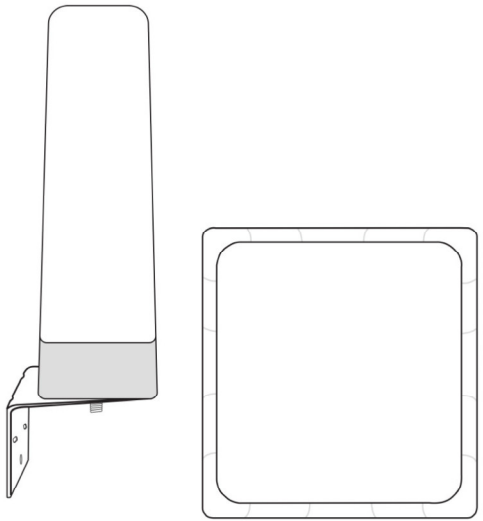
INVCALL

User's Manual



Internal No. T10IN-NA

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Safety Guidelines

FCC Statement

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

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

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.

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.

Consumer Signal Booster Warning Label:

If the booster has this label (all consumer boosters sold after March 1, 2014, and some sold prior will have this label):

1.Verify that your provider has given permission (e.g., AT&T, Sprint, T-Mobile, Verizon) , or else get permission from your wireless provider to use it.

2.Register your booster with your wireless provider before turning it on. Each wireless provider that gives permission for boosters to be used must provide a free registration system.

IC Statement

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

(1)This device may not cause interference; and (2) This device must accept any interfer-ence, including interference that may cause undesired operation of the device.

The term IC: before the certification/registration number only signifies that the Industry Canada technical specifications were met. This product meets the applicable Industry Canada technical specifications.

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

Cet appareil contient des émetteurs/récepteurs exemptés de licence conformes aux RSS (RSS) d'Innovation, Sciences et Développement économique Canada. L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et
(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Le terme IC : devant le numéro de certification/d'enregistrement signifie uniquement que les spécifications techniques d'Industrie Canada ont été respectées. Ce produit répond aux spécifications techniques applicables d'Industrie Canada.

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et votre corps.

Electrical Specification:

Model	Frequency Band	Uplink	Downlink
T10IN-US59	B12, 17	698 ~ 716MHz	728 ~ 746MHz
	B13	776 ~ 787MHz	746 ~ 757MHz
	B5	824 ~ 849MHz	869 ~ 894MHz
	B4	1710 ~ 1755MHz	2110 ~ 2155MHz
	B25, 2	1850 ~ 1915MHz	1930 ~ 1995MHz
T10IN-CA60	B12, 17	698 ~ 716MHz	728 ~ 746MHz
	B5	824 ~ 849MHz	869 ~ 894MHz
	B66, 4	1710 ~ 1780MHz	2110 ~ 2180MHz
	B25, 2	1850 ~ 1915MHz	1930 ~ 1995MHz
	B7	2500 ~ 2570MHz	2620 ~ 2690MHz
Max. Gain	B5, 12, 17, 13	≤64dB	≤64dB
	B2, 4, 25	≤72dB	≤72dB
Max. Output Power		≤23dBm	≤10dBm

Electrical Specification:

Manual Gain Control	≤20dB / 1dB step Attenuation
Automatic Gain Control	≤15dBm
Automatic Shut Down	The band channel is shut down automatically when self-oscillation happens, input signals are too strong or reduction value of the gain reaches the limit 20dB.
Noise Figure	≤6dB
VSWR	≤1.8
Group Delay	≤1.5μs
Sleep mode	Reduce power consumption
Power Supply	Input AC 100~240V 50/60Hz, Output DC 12V/2A

APP Display & Control Function:

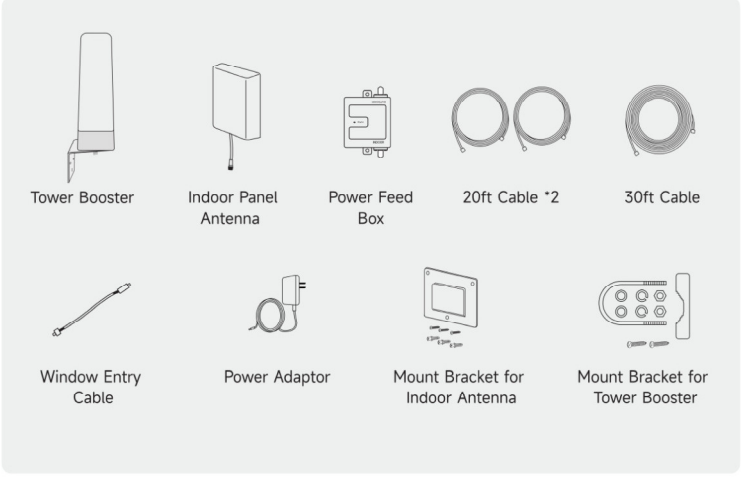
APP Page	Function
My Device - RF Control Parameters	Adjust the gain for each band channel (when self-oscillation happens or input signals are too strong).
	Monitor working status of the booster.
	Monitor the isolation status.
Find Cell Tower	See the frequency band of you phone and help you find the best installation location of outdoor antenna.
Installation Video	Watch guide videos to help you complete installation.
Help	Send messages to us if you have any queries or are experiencing any problems.

Mechanical Specifications:

Mechanical Specifications	Standard
I /O Port	SMA Female
Impedance	50ohm
Operating Temperature	-25°C~+55°C
Environment Conditions	IP40
Dimensions(Length*Width*Height)	60*60*277mm
Weight	0.7Kg

Package Contents

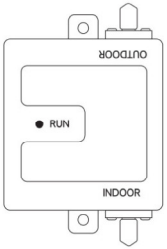
Please confirm that your purchase includes the following items:



Introduction of the Tower Signal Booster

The tower signal booster is integrated with the outdoor antenna, so it can receive signals from the cell tower and amplify signals at the same time. Since input signals are now amplified before the loss happens (when transmitting through the cable), there is now greater effect of signal amplification.

Introduction of the Power Feed Box



Since the tower signal booster is installed at a high location outdoors, the RF line feeding method is adopted and a power feed box is provided to help supply the power.

- If the power is correctly supplied, the indicator light of the power feed box shows green.
- If not, the indicator light shows red. In this case, please check if cables are connected correctly and all connectors are tightened.

Before Getting Started

The whole installation process may take 1 to 2 hours, and 2 people will be easier to calibrate the position and direction of the antenna. Make sure the following materials are prepared and ready for your installation.

1. 2 inches diameter mount pole

2. Phillips-head screwdriver

3. Adjustable wrench or open-end wrench

4. Drill (if routing cable through wall)

Note: We strongly recommend that you find optimal locations for indoor and outdoor antennas via a pre-installation process, then start your formal installation.

Installation

Installation Overview

Note: Do not power on the booster until system is fully installed.

Step 1 Find Location with the Strongest Signal

Find a location outside the house that has the best reception of cell phone signals. It is recommended to install the tower signal booster in a high, open, and unobstructed location such as the roof.

(Use 'Signal Advisor' APP to check signal strength and find direction of your carrier's cell tower, see the APP instruction on Page 16 for detailed guide.)

Step 2 Mount the Tower Signal Booster

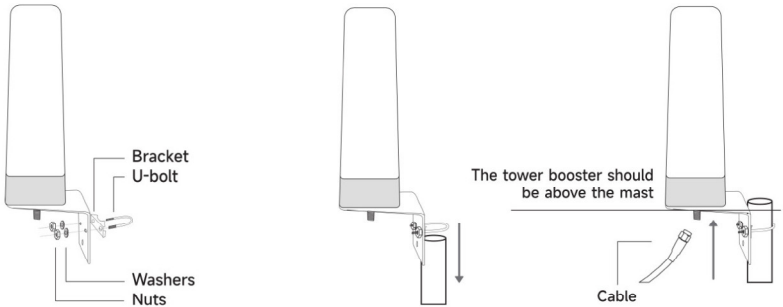
Before you begin, please note that you may require a mast on which to mount the tower signal booster, you need to purchase it additionally from the manufacturer.

After identifying the location with the strongest signal, decide the installation location for your tower signal booster. It should allow for sufficient isolation between the tower booster and the indoor antenna. Vertical isolation is preferred as it is more effective than horizontal.

Note:

1.Tower signal booster can receive signals with a 360-degree reach and amplify signals at the same time. Mount the tower signal booster at the highest possible location and install it upright.

2.The greater the isolation between indoor antenna and tower signal booster, the better performance you will get from the booster.



Tower Booster Install Illustration

Installation Steps:

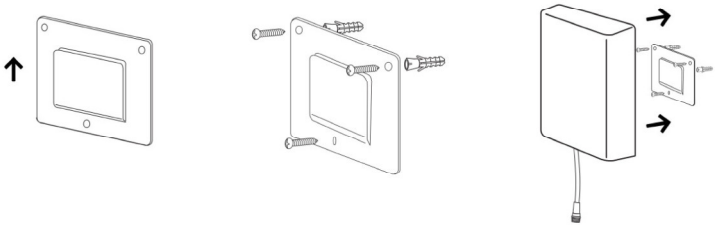
1. Assemble the u-bolt, bracket, nuts and washers onto a mast (not provided) as shown in the illustration.
2. Connect one end of the provided coax cable to the antenna and tighten the connection.

Step 3 Mount the Indoor Wall Mount Panel Antenna

The Indoor Panel Antenna is directional with a 120-degree reach, it should be mounted on a vertical surface or wall where there are no objects that may obstruct signals. Please connect the antenna to the connector behind the Power Feed Box labelled 'INDOOR'.

Note: 1. The Indoor Panel Antenna should be intalled in indoor activity area to get best coverage and at least 9 meters away linearly from the outdoor antenna.

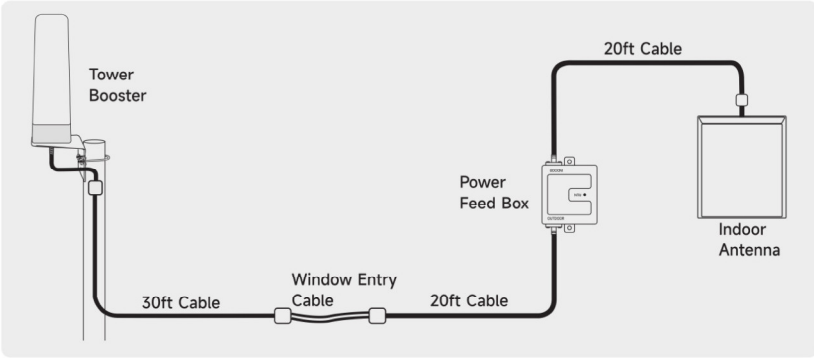
2. The installation height is the approximate 1.5-2 meters.



Panel Antenna Install Illustration

Step 4 Route & Connect Cable to the Power Feed Box

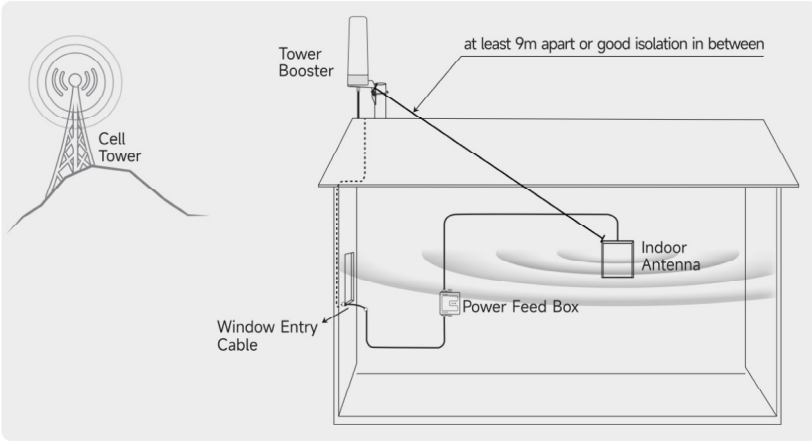
Connect the cable to tower signal booster and route cable into house. All connections should be tightened.



A **Window Entry Cable** is provided to help route cable into house easier. Route cable to the power feed box, please connect it to the connector labelled 'OUTDOOR'.

Step 5 Power On the Booster & Check Performance

After completing the installation step by step, turn on the power and the booster will start to work. The indoor signal strength should be enhanced for normal use. If the signal is not improved, please refer to troubleshooting steps.



Step 6 Troubleshooting

Problem	Resolution
Indicator Light of the Power Feed Box shows Red	1.Check that the tower signal booster is connected to the connector of the power feed box labelled 'OUTDOOR' and the indoor antenna is connected to the connector labelled 'INDOOR'. 2. Make sure cables are connected correctly and all connectors are tightened.
Indoor signal strength has not improved	1. Check if the installation is correct. If not sure, please contact us. 2.Connect the booster to Signal Advisor APP and check the working status of the booster. 3. Verify that the frequency band of your cell phone matches with the frequency band supported by booster. For Android: Use our 'Signal Advisor' APP, see the APP instruction for detailed guide For iPhone: Dial No. *3001#12345#* → Tap 'Serving Cell Info' → Check 'Band Info'
Indoor signal coverage is too narrow	Find a location outdoors that can receive stronger signals to install the tower signal booster. Please install the tower signal booster as high as possible.

Instructions of Signal Advisor APP:

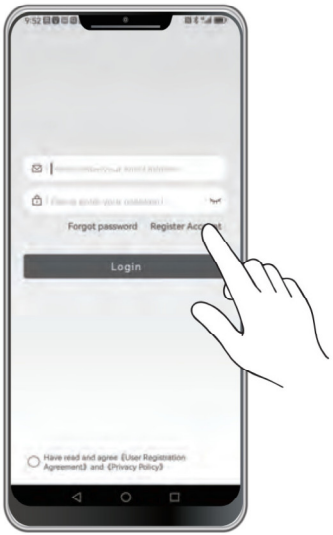
- **For Android:**

Download from Google Play

GET IT ON Google Play

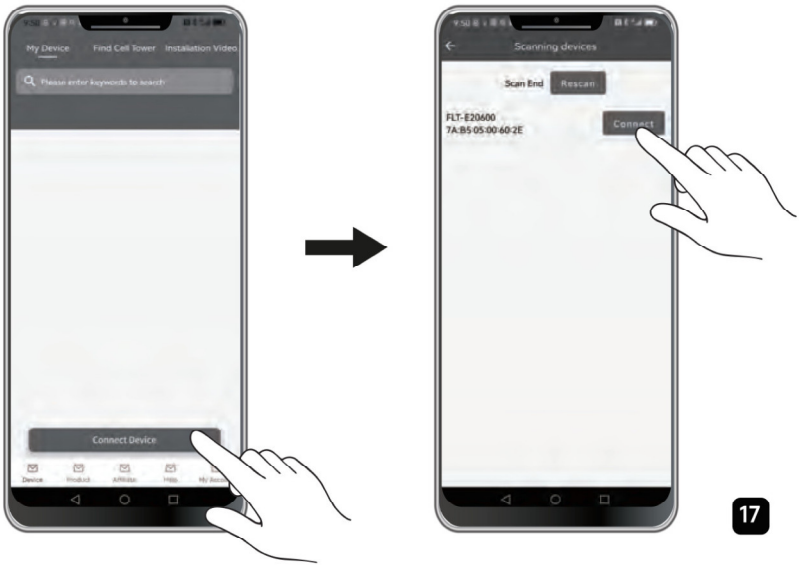
❶ Log in:

After launching the APP, for the first time use, you need to register your account, you will be prompted to enter your email address, your buying platform and create your password.

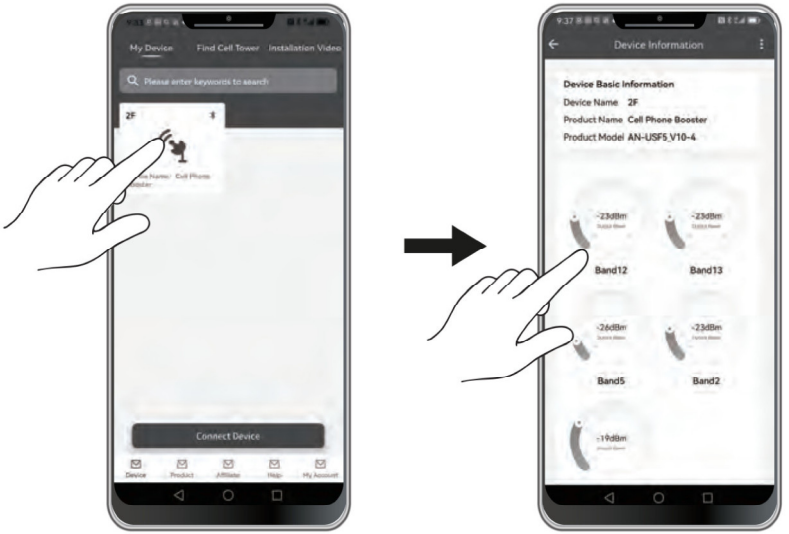


❷ Connect your booster:

After powering on the booster and logging into the APP, you will see the page as shown on the left. Tap '**Connect Device**' to search for your signal booster, then tap '**Connect**'.

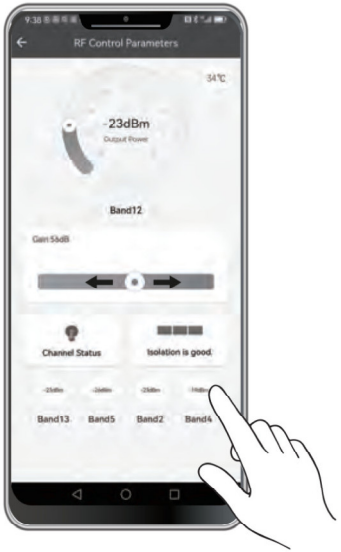


After successful connection, you can see that the booster is now shown on '**My Device**' page. Tap the icon of the booster and you can enter the page as shown on the right. The output power for each frequency band of the booster is displayed here. You can see more detailed information for each band by taping each band icon.

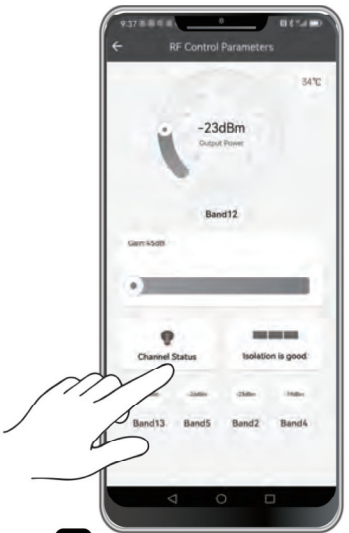


❸ Monitor Working Status and Adjust the Gain:

After selecting one particular band, you can enter the page as shown. Here you can observe the **output power**, the **gain**, **channel status** and current **isolation status** of the booster for Band 12. You can adjust the gain by dragging the white circle along the blue bar. At the bottom of the screen, you can switch between different frequency bands.



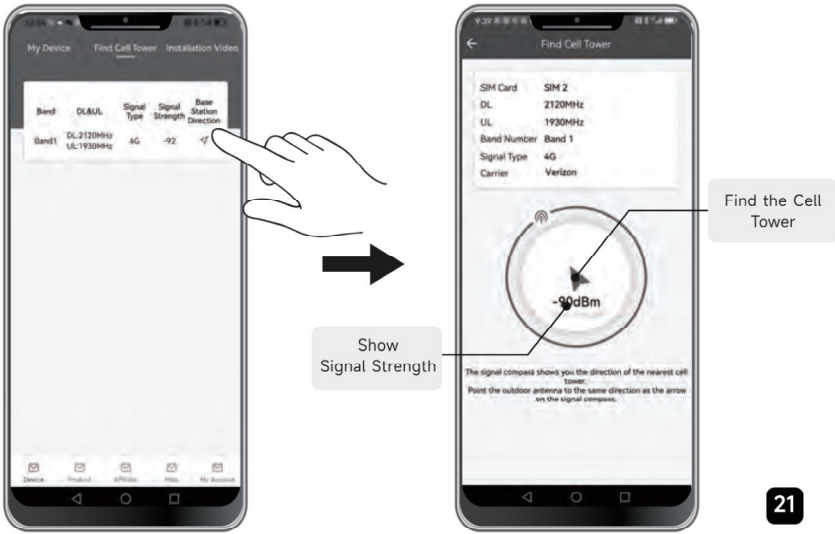
Just in case, if you observe the page as shown on the left (channel status shows red), it means that the booster is not boosting signals for Band 12. Please don't worry, you may adjust the gain or tap the red bulb icon to see solution guide.



OSC Alarm:
1. Please increase the separation between the inside and outside antennas, additional vertical separation works best.
2. Please make sure there is a barrier between inside and outside antennas, such as a thick wall.
3. If your booster kit uses directional antennas, ensure that they are facing away from one another.

❹ Test Frequency Band and Find Cell Tower:

First, tap '**Find Cell Tower**'. You can see the frequency band of you phone here. Then, tap the blue arrow icon shown below '**Base Station Direction**' and you can enter the page as shown on the right. You can now follow the signal strength prompts shown in the blue circle to find a direction with strong and stable signals as the installation direction of your outdoor antenna.



❺ Watch Installation Video:

At the top of the screen, tap '**Installation Video**'.

❻ Contact Us:

If you are experiencing any product installation problems, please do not hesitate to contact us.

You can send messages to us by tapping '**Help**' at the bottom of the screen. You can also leave your email address here if we don't reply in time.

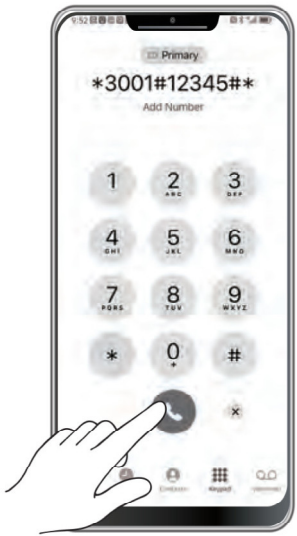
• **For iPhone:**

Download the APP from App Store

Available on the App Store

❶ Test Frequency Band:

Dial No. ***3001#12345#*** → Tap '**Serving Cell Info**' → Check '**Band Info**'



❷ Find Cell Tower:

First, tap '**Find Cell Tower**'. Then, tap the text '**Click to get the location**' and you can enter the page as shown on the right. You can now follow instruction steps to fill in your '**Cell ID**' and '**LAC**' and then tap '**Find the cell tower**'.

Follow the signal strength prompts shown in the blue circle to find a direction with strong and stable signals as the installation direction of your outdoor antenna. You can tap the text '**Try again to find the cell tower**' to go to the previous page.

Other functions of the APP for iPhone please refer to the instruction for Android, they are basically the same.

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.

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

Outdoor Antenna					
Outdoor Antenna	Indoor Antenna Gain				
	Lower 700MHz	Upper 700MHz	Cellular	PCS	AWS
Omni-directional Antenna	2.7	2.7	3.0	3.0	3.0
Indoor Antenna					
Indoor Antenna	Indoor Antenna Gain				
	Lower 700MHz	Upper 700MHz	Cellular	PCS	AWS
Ceiling Antenna	3.0	3.0	3.0	4.5	4.5
Indoor Panel Antenna	6.0	6.0	6.0	8.0	8.0
Outdoor Cable					
Outdoor Cable	Outdoor Cable Loss				
	Lower 700MHz	Upper 700MHz	Cellular	PCS	AWS
20feet (6.1 meters) PH-400 Cable SMA male/SMA male	0.9	0.9	1.34	1.73	1.66
Outdoor Cable					
Outdoor Cable	Outdoor Cable Loss				
	Lower 700MHz	Upper 700MHz	Cellular	PCS	AWS
30feet (9.15 meters) PH-400 Cable SMA male/SMA female	1.09	1.09	1.75	2.34	2.25
Outdoor Cable					
Outdoor Cable	Outdoor Cable Loss				
	Lower 700MHz	Upper 700MHz	Cellular	PCS	AWS
1feet (0.3 meters) RG316 Window Entry Cable SMA male/SMA female	0.71	0.71	0.74	1.03	0.87
Indoor Cable					
Indoor Cable	Indoor Cable Loss				
	Lower 700MHz	Upper 700MHz	Cellular	PCS	AWS

20feet (6.1 meters) PH-400 Cable SMA male/SMA male	0.9	0.9	1.34	1.73	1.90

Warranty

30-day money-back guarantee

90-day free replacement

2-year manufacturer warranty

We provide a standard warranty period for each items from the date of purchase, some cases may have an extended warranty, please contact our service for more detail.

This limited warranty provided by the manufacturer in no way affects a potential statutory warranty provided by law.

You can enjoy an extra 1-year warranty and priority customer support after registering the booster on our website.

Note:

1. Only for customers that bought the product at FULL PRICE through our Official Seller on Amazon.com.
2. The 3-year Warranty is only for the MAIN BOOSTER, EXCLUDING antennas, cables and power supply.
3. To register, please go to our website to active your warranty: https://www.invcall.com/pages/active-warranty

Any questions, please contact us.

wecare@invcall.com

www.invcall.com