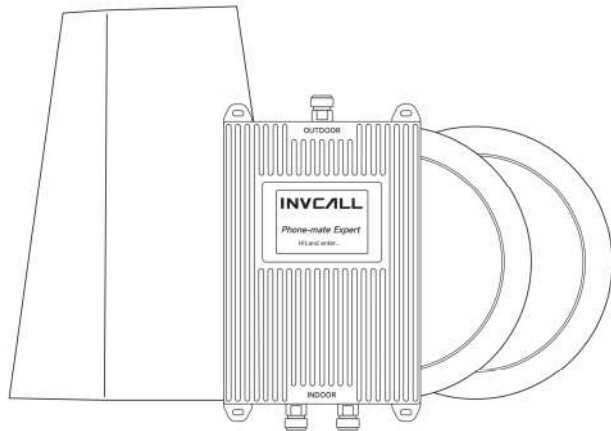


INVCALL

User's Manual

Cell Phone Signal Booster



Internal No. T30IN-2CL-NA

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.

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 & 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 interference, 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 ISSED 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 ISSED 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.

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

mode	Frequency(MHz)	Antenna Gain(dBi)			Cable loss(dB) max
		YAgI Antenna (model: PTE-YG-800/1900)	Log Periodic Antenna (model: AN-201)	Omni-directional Antenna (model: PTE-GF-700-2500)	
Uplink	698-716	7	7	2.7	1.09
	776-787	7	7	2.7	1.09
	824-849	6	7	3	1.75
	1850-1915	6.2	7	3	2.34
	1710-1755	6.2	7	3	2.25
mode	Frequency(MHz)	Ceiling Antenna (model: AN301)	Indoor Panel Antenna (model: AN101)	/	Cable loss(dB) max
Downlink	728-746	3	6	/	1.09
	746-757	3	6	/	1.09
	869-894	6	6	/	1.75
	1930-1995	4.5	8	/	2.34
	2110-2155	4.8	8	/	2.6

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

LCD Screen Display & Control Function:

Screen Display	Function
Device Information	Display the gain, input and output power for each frequency band.
Alarm Status	Display the working status and alarm information of uplink and downlink for each frequency band.
Set Gain	The gain of each frequency band can be adjusted according to the actual use.
Set Sleep Threshold	Reduce power consumption.
Factory Default	Restore factory default in overwhelmed emergence in use.

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 your 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	N-Female
Impedance	50ohm
Operating Temperature	-25°C~+65°C
Environment Conditions	IP40
Dimensions	235mm*138mm*34mm
Weight	1.3Kg

Package Contents

Please confirm that your purchase includes the following items:



Booster



Indoor Ceiling
Antenna * 2



Outdoor Log-period
Antenna



20ft Cable * 2



30ft Cable * 2



Window Entry
Cable



Power Adaptor



Mount Bracket for
Outdoor Antenna

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

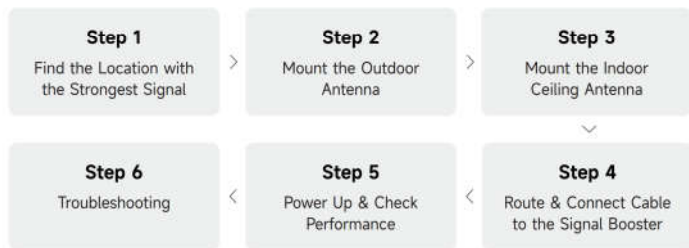


4. Drill (if routing cable through wall)

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 it 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 23 for detailed guide.)

Step 2 Mount the Outdoor Directional Log-Periodic Antenna

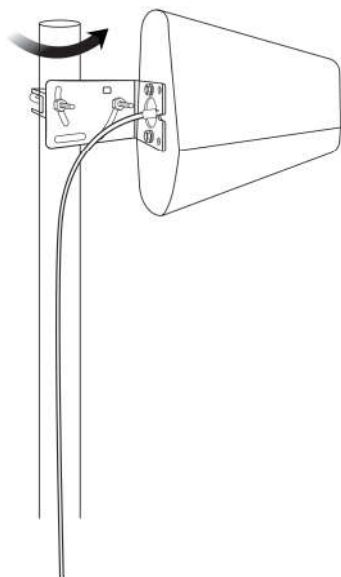
Before you begin, please note that you may require a mast on which to mount the outdoor antenna, you need to purchase it additionally from the manufacturer.

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

The Directional Log-Periodic Antenna should be mounted at the highest possible location above the roof line and point towards the direction of your carrier's nearest cell tower. **This is the most critical step of installation process because it will determine the overall performance of the booster.**

Note:

1. The greater the isolation between indoor and outdoor antennas, the better performance you will get from the booster.
2. Make sure Indoor Antenna and Outdoor Antenna are installed in opposite directions.

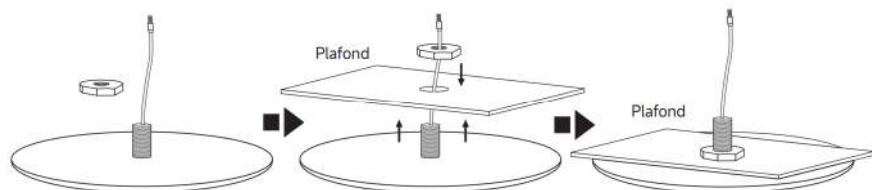


Step 3 Mount the Indoor Ceiling Antenna

The Ceiling Antenna is designed for central locations with 360-degree coverage, please mount it on the ceiling in a central location.

Installation Steps:

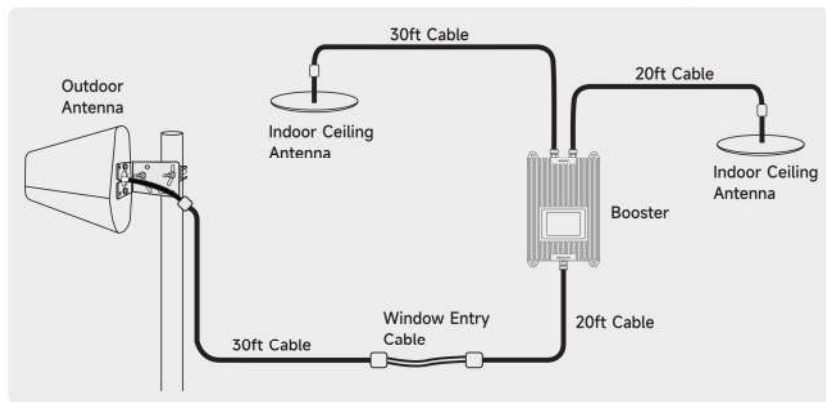
1. Drill a 20mm diameter hole in the ceiling. The ceiling thickness should be 30mm maximum.
2. Unscrew fixing nut from the antenna. Place antenna cable through the hole. Screw the fixing nut back onto the antenna, and go through the cable from the crawl space side of the ceiling and fasten.
3. Attach the connection from the indoor antenna to the connector labeled 'INDOOR' on your booster.
4. Tighten fixing nut to secure antenna (do not over-tighten).



Ceiling Antenna Install Illustration

Step 4 Route & Connect Cable to the Signal Booster

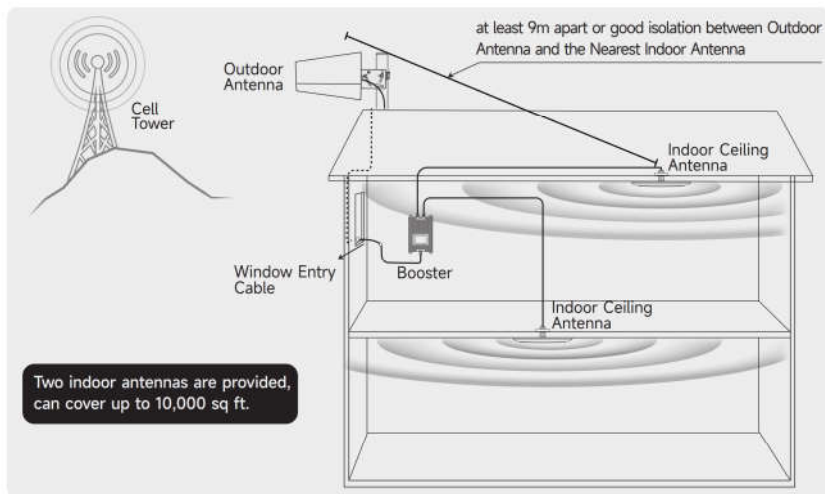
Connect the cable to outdoor antenna and route cable into house. All connections should be tightened.



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

Step 5 Power On the Booster & Check Performance

After completing 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 still not improved, please refer to troubleshooting steps.

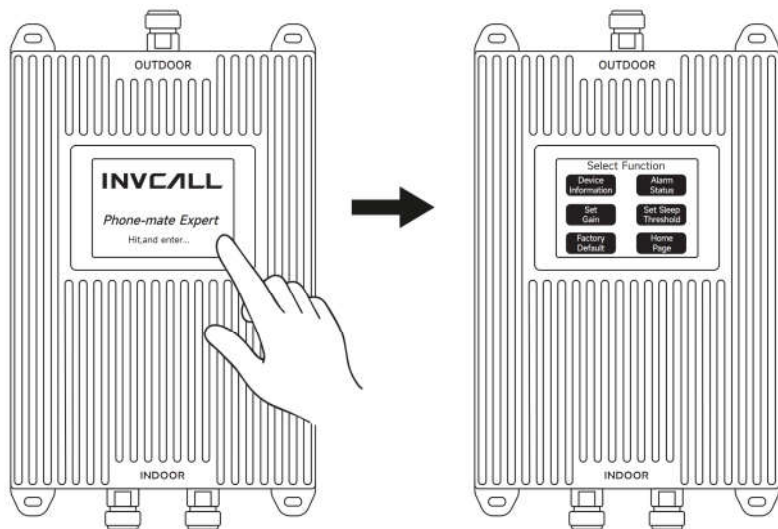


Step 6 Troubleshooting

Problem	Resolution
Alarm Status for a particular frequency band channel shows red	Stronger signal input or self-oscillation has been detected, AGC (Auto-Gain Control) function is working and one or more of the band channel have been shut down. 1. Increase the distance (ideally greater than 9m) between indoor and outdoor antennas if possible, make sure that they are installed in opposite directions. 2. Tap the screen of main booster or enter the setting page on 'Signal Advisor' APP, adjust the gain manually. 3. Try to adjust the direction of the outdoor antenna to slightly deviate from the signal tower base station to reduce input signal strength.
Indoor signal strength has not improved	1. Check if the installation is correct. If not sure, please contact us. 2. 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	1. Find a location outdoors that receives a stronger signal as the installation location of outdoor antenna. Please install the outdoor antenna as high as possible. 2. Use 'Signal Advisor' APP to find the direction of the nearest cell tower as the installation direction of the outdoor antenna.

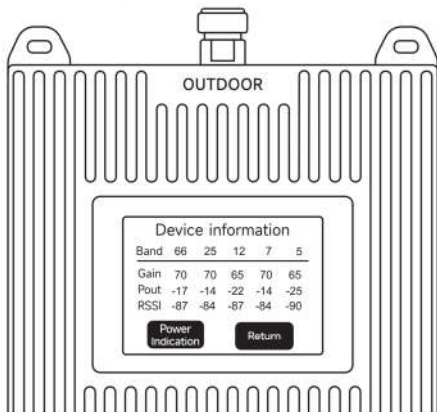
Introduction of LCD Display

After powering on the booster, you will observe the interface on the left. Tap the screen to go to the main menu.



1 Device Information

This interface mainly displays the **Gain**, **Output Power**, and **RSSI** value for each frequency band.

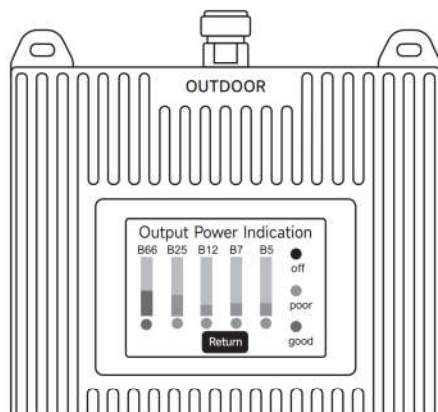


1. **"Gain"**: Gain for each frequency band.
 2. **"Pout"**: Output Power of the booster for each frequency band.
 3. **"RSSI"**: Received Signal Strength Indication, which is the strength of signals received by outdoor antenna.
- Tap on **"Power Indication"** to enter the interface that displays the output power for each frequency band.

Output Power Indication

This interface is used to display output power of the booster. The greater the proportion in color, the greater the output power for this frequency band and thus greater the coverage. If you find the coverage is narrow, you can enter this interface to check.

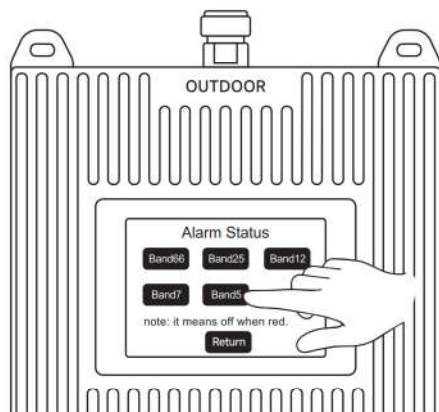
Green indicates good signal, yellow indicates poor signal and red indicates the band channel is off.



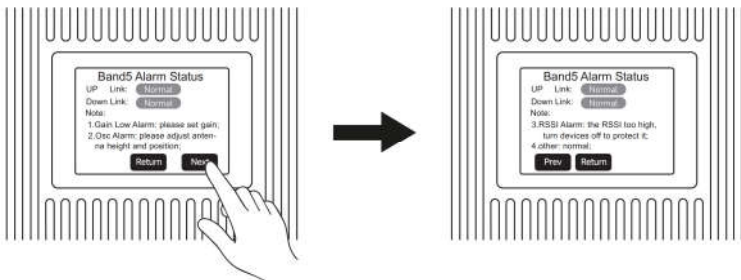
2 Alarm Status

This interface shows the alarm information for each frequency band.

Tap on the band number to check the detailed alarm status for each frequency band.



The corresponding sub-menus are as follows:



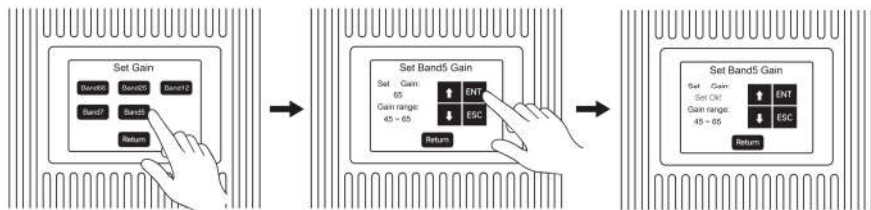
This interface shows the causes and solutions of alarms.

- Gain Low Alarm:** Manually set gain for a frequency band to be too low will cause booster shut down for this band channel. You can go to the gain setting interface to increase the gain.
- OSC Alarm:** Self-oscillation has been detected, please increase isolation between indoor and outdoor antennas (vertical isolation works best). Please ensure that they are installed in opposite directions.
- RSSI Alarm:** The booster has shut down for this particular frequency band since the input signal is too strong. Please adjust the direction of outdoor antenna to slightly deviate from the direction of cell tower and restart the booster.
- Sleep off:** The unit goes into sleep mode for this band channel.

3 Set Gain

This interface allows you to set the gain manually for each frequency band.

Tap on the band number to enter the setting page.



Tap on "↑" / "↓" to increase / decrease the gain by one unit.

Tap on "ENT" to confirm and "ESC" to undo the setting.

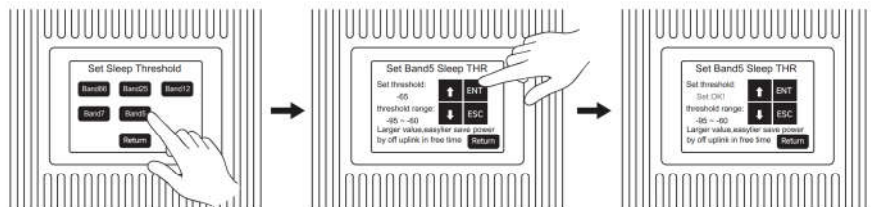
4 Set Sleep Threshold

This interface allows you to set the sleep threshold for each frequency band.

Tap on the band number to enter the setting page.

- When the uplink output power is lower than the threshold for more than 5 minutes, the uplink channel shuts down automatically and enters the sleep mode.
- When the uplink output power is greater than the threshold, the channel turns on automatically and works as normal.

Note: The larger the threshold, the easier it is for the booster to enter the sleep mode. The default value is -65dBm.



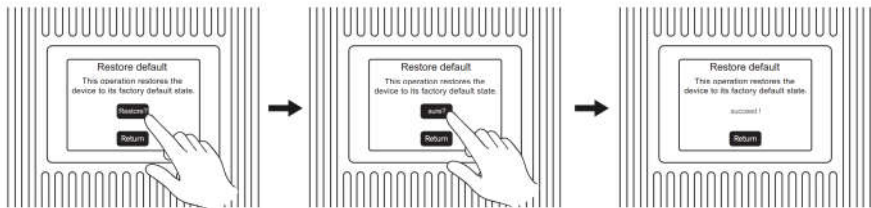
Tap on "↑" / "↓" to increase / decrease the threshold by one unit.

Tap on "ENT" to confirm and "ESC" to undo the setting.

5 Factory Default

This interface is used to reset configuration values of the booster to factory configuration.

Confirmation is required after tapping on **"Restore?"**. After confirmation the booster will restore the factory configuration and display **"succeed!"**. Tap on **"Return"** to exit the interface.



5 Home Page

Tap on **"Home Page"** to return to the initial interface.

Instructions of Signal Advisor APP:

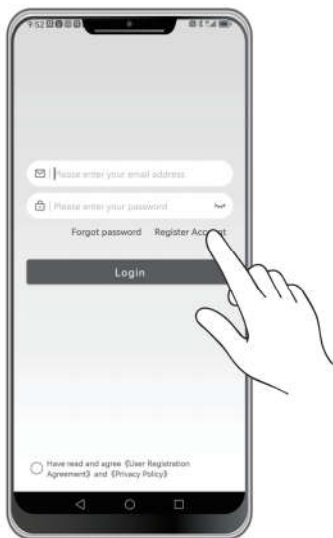
- For Android:

Download from Google Play



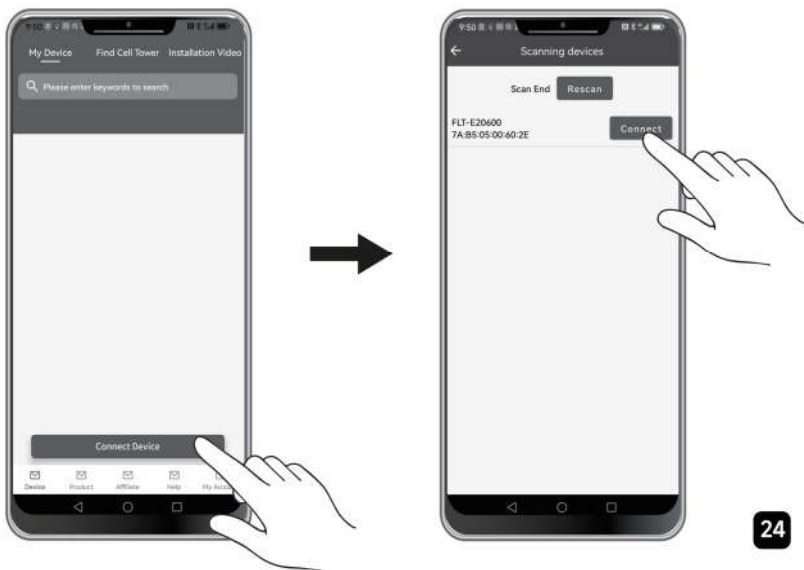
1 Log in:

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.

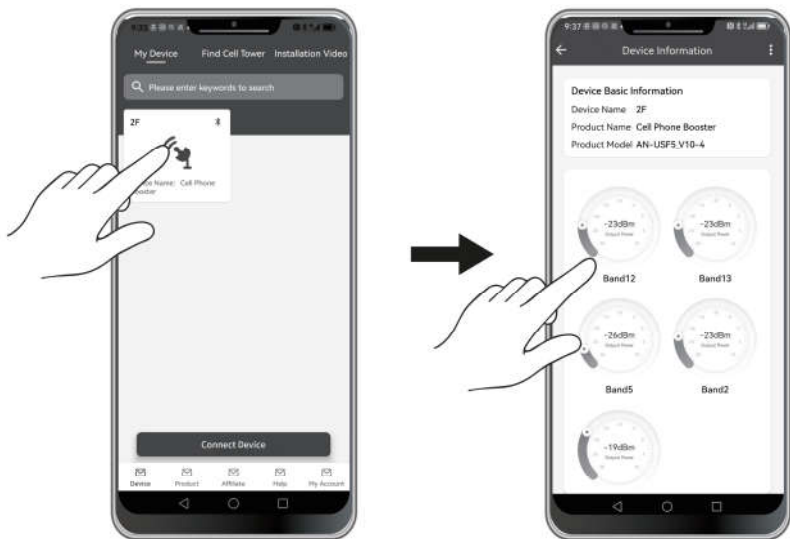


2 Connect your booster:

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'**.

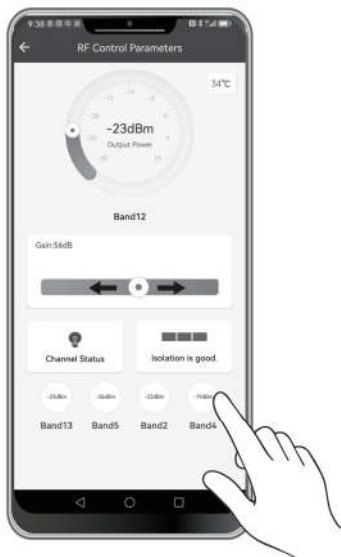


After successful connection, you can see that the booster is now shown on **'My Device'** page. Tap the icon of the booster and you can enter the page as shown on the right. The output power for each frequency band of the booster is displayed here. You can see more detailed information for each band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



3 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.

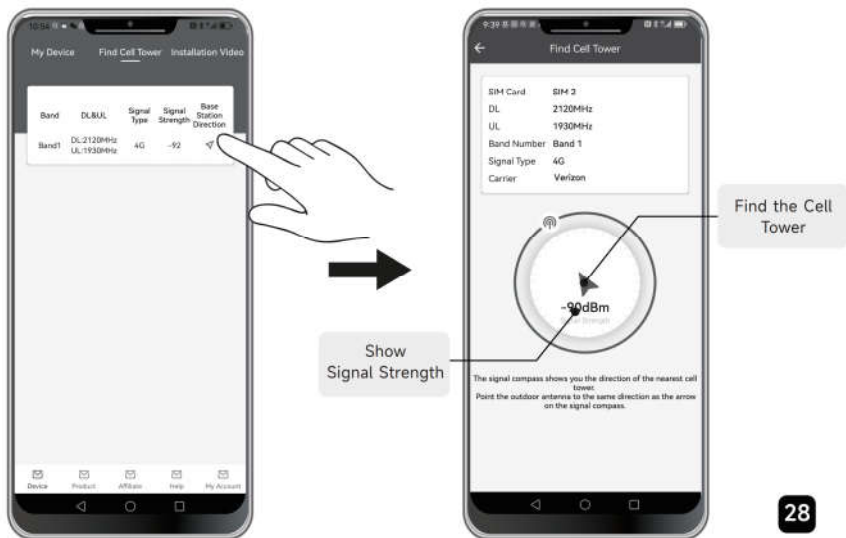


OSC Alarm:

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.

4 Test Frequency Band and Find Cell Tower:

First, tap 'Find Cell Tower'. You can see the frequency band of your 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.



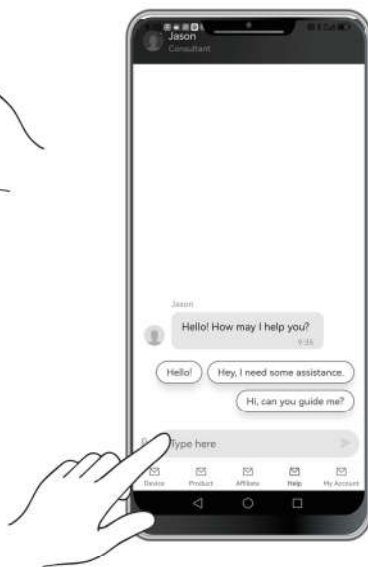
5 Watch Installation Video:

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



6 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



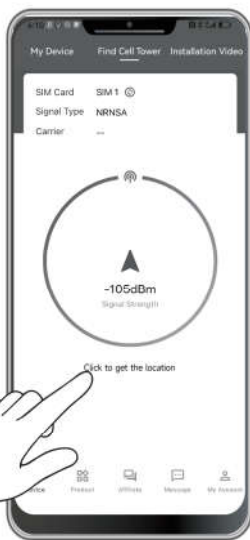
1 Test Frequency Band:

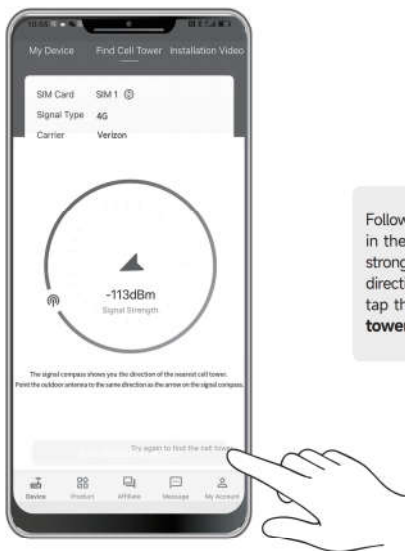
Dial No. *3001#12345#* → Tap 'Serving Cell Info'
→ Check 'Band Info'



2 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.

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