

Read This First

# CEL-FI GO X

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**Installation Guide**



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# Install manuals, who needs 'em?

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Boosters can be finicky. And The Cel-Fi GO X is no exception. It will take a bit of work to get your GO X unit set up correctly.

But there's a reason that most people are willing to take the time to perform an installation, even if it takes 4 to 5 hours. The GO X is the only device on the market that provides an industry-leading 100 dB of gain. Once you get it set up and running properly, you should see a **significant** improvement in signal, right away.

We've written this guide based on our own experiences and those of dozens of customers who we've helped. **We promise you'll be glad if you read this manual through thoroughly before you get started.** It'll help you save time, avoid the most common pitfalls, and ensure your system works as well as possible. If you get stuck, just call us at 800-761-3041.

## Compatibility

First, a quick reminder. The Cel-Fi Go X is compatible with:

-  AT&T 3G and LTE signal
-  T-Mobile 3G and LTE signal
-  Verizon LTE signal
-  Verizon 2G/3G signal

The lack of Verizon 2G/3G compatibility isn't a big deal. Here's why: as long as you have LTE signal available in your area to boost, you should be fine.

Most phones released after 2014 support "HD Voice" - also known as "Voice over LTE" (VoLTE). VoLTE is usually enabled by default. For example, all iPhones released since 2014, including the iPhone 6, support VoLTE. If you're worried about it, just give us a call.

## Stuck?

We're here to help. Or just to chat about how strong or weak your cell signal is. We get out of bed in the morning to talk about this stuff - we're not kidding.

Call us at 1-800-761-3041, 7am-5pm PT or visit [RepeaterStore.com/help](https://RepeaterStore.com/help)



Isolation is increased when:

- 1** You **increase horizontal or vertical distance** between indoor and outdoor antennas.
- 2** You position the antennas so there is **more building materials** separating them.
- 3** You **point the indoor and outdoor antennas away from each other**.

For best performance, we recommend **at least 50 feet of separation** between the indoor and outdoor antennas, or **at least 30 feet and two layers of building materials**.

Please note that these are just guidelines. Often you'll need to compromise isolation in order to get the best signal quality or to cover the entire building with signal from the indoor antennas.

Once your GO X is installed and operational, you can check isolation by looking at the "Echo Gain" values in the Advanced tab of the Wave app. See the "Advanced Tab" section near the end of this document for more information.

If you're having any problems, please reach out to us, we'll be happy to walk you through optimizing the installation to make sure you're getting the absolute best results.

## 02 **Amplifier Install Location**

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If you have weak outdoor signal (1 bar, or less than -100 dBm RSRP signal), it's best to install the GO X as near to the donor antenna as possible and cut and crimp the cable to reduce the cable length. Of course, you should make sure the donor antenna is outdoors and the GO X is indoors.

**Here's why:** If your signal is weak to begin with, it will become even weaker (attenuate) as it passes through a longer length of cable. The signal may be unusable by the time it gets to the GO X. If the outdoor signal is strong, the GO X's location doesn't matter.

A shorter cable run will mean that the signal is strong enough for the GO X to recognize and boost it.



# 04 Outdoor Antenna Location & Aiming

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Finding the best location possible for the Outdoor Antenna is critical. There are two things you need to consider:

- 1 Isolation from the indoor antennas
- 2 Signal quality

Signal quality is very important: the better the signal at the Outdoor Antenna location, the better the signal that the amplifier has to boost.

## How To Measure Signal Quality

For some buildings, the location with the best signal may be on top of the roof. In others, the best location is the side of the building. The best way to find out is to test.

There are two ways you can measure signal quality:

- 1 You can simply look at the **number of bars** on a phone connected to the carrier that you're boosting. This is a crude measure, but if you have 3 or more bars of signal, you should be fine.
- 2 You can use **Field Test Mode on Apple iOS** devices or **LTE Discovery on Android** phones to measure SINR, a measure of signal quality. You can read more about these here: [RepeaterStore.com/fieldtest](https://RepeaterStore.com/fieldtest)

Note: You can also measure the SINR using the "Advanced" tab of the Cel-Fi Wave Application, which is explained at the end of this document.

**To find the best Outdoor Antenna location:** walk around the perimeter of your building with your phone, and if you can, get up on the roof. You're looking for a location with good SINR (ideally above 5 dB) and good isolation from the indoor antenna locations.

## Fine-Tuning and Aiming:

In the "Outdoor Antenna Positioning" section near the end of this guide we explain the Wave application's "Antenna Position Test."

The Antenna Position Test can help you test and compare multiple Outdoor Antenna locations, and will help you aim the antenna at the source of the best signal.



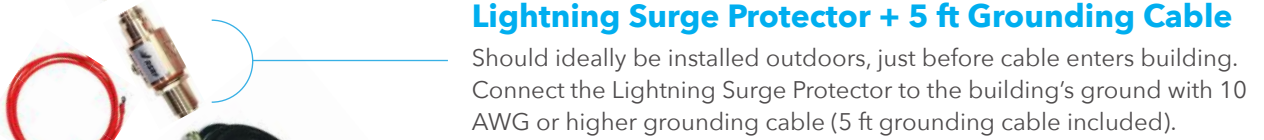




**Antenna Mount & Outdoor Directional Antenna**

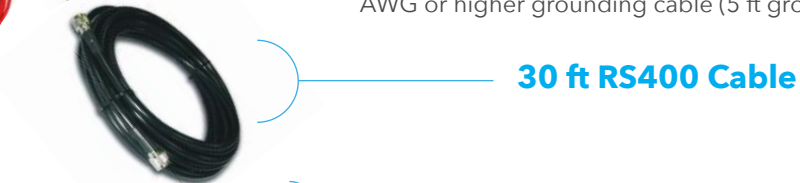


**5 ft RS200 Cable**



**Lightning Surge Protector + 5 ft Grounding Cable**

Should ideally be installed outdoors, just before cable enters building. Connect the Lightning Surge Protector to the building's ground with 10 AWG or higher grounding cable (5 ft grounding cable included).



**30 ft RS400 Cable**



**SMA to N-type Pigtail Adapter**

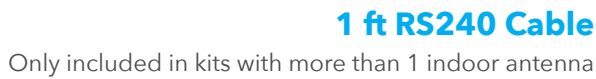


**Cel-Fi GO X**

**AC Power Adapter**



**SMA to N-type Pigtail Adapter**



**1 ft RS240 Cable**

Only included in kits with more than 1 indoor antenna



**Splitter**

Only included in kits with more than 1 indoor antenna

**Dome, Panel or Ultraflat Antenna**

Quantity depends on kit purchased



**30 ft RS400 Cable**

One 30 ft cable included in kit per indoor antenna



# 07 Understand How The Go X Works

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## The GO X “Searches” For Signal

Unlike other boosters, the GO X *doesn't* amplify the entire frequency spectrum. Instead, it searches for and then amplifies the best signal available from the carrier.

At any given time, the GO X can amplify up to two frequencies transmitted by your carrier.

In the Wave mobile app, you can watch in the “Advanced” tab as it scans the frequencies on different bands to find the best signal to amplify.

Anytime you power-cycle the GO X or disconnect the outdoor antenna cable, it will restart scanning to find the best signal.

**Anytime you unplug the cable from the outdoor antenna, power cycle the GO X by unplugging its power.** The GO X starts scanning as soon as you unplug the outdoor antenna cable. To make sure it scans all frequencies, restart the unit after reconnecting the cable.

## Activity Lights

A small light on the GO X flashes to indicate the current status.



**Solid Green:**

The GO X has found the best band is amplifying.



**Blinking Green:**

The GO X is scanning for networks to boost.



**Blinking Red:**

The unit is in an error condition. Check the app for more information.



**Solid Red:**

If the status light remains red, the device has a hardware issue. Call us for a replacement.

## Boot-up Sequence

On first being plugged in, the GO X activity light will start solid red, then flash red, then move on to blinking green as it starts scanning the cellular frequency bands.

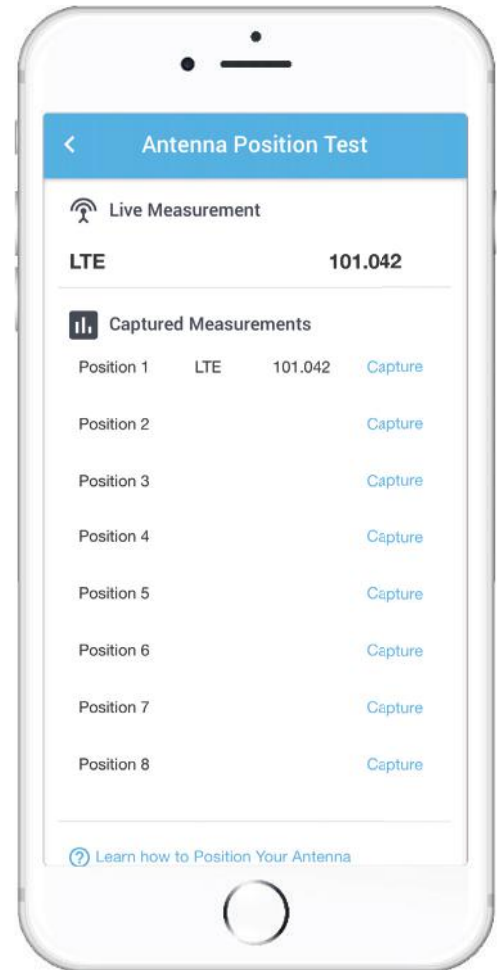
# 08

## Using the Antenna Position Test

The Wave app comes with an Antenna Position Test that can help you achieve the ideal balance between isolation and signal quality.

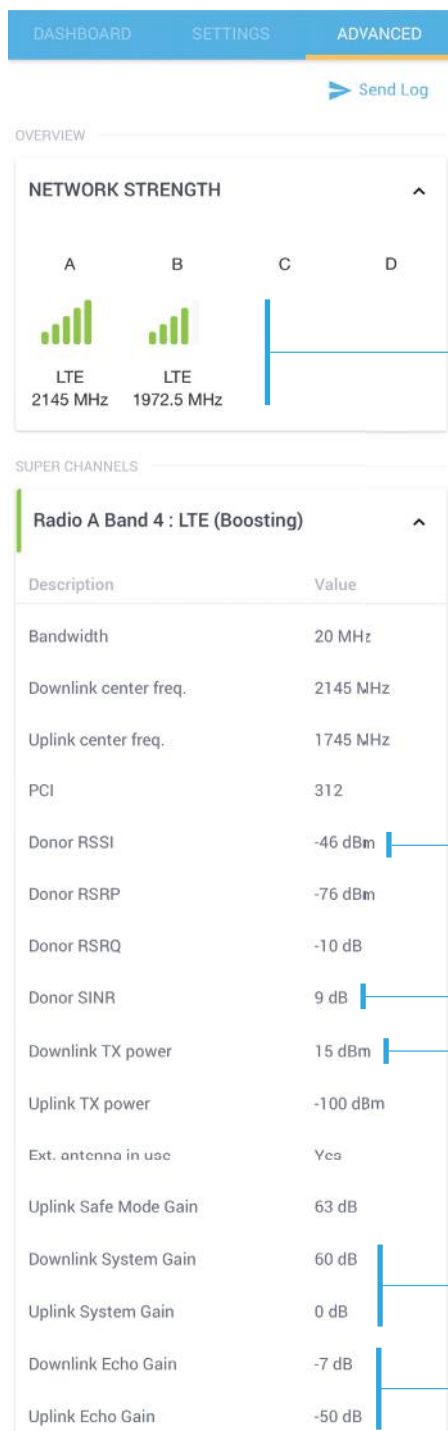
1. Make sure that your indoor antenna(s) are located approximately where they will be installed.
2. In the Wave app, go to the “**Settings**” tab, and under the “**Antenna Settings**” tab select the “**Antenna Position Test**” option.
3. The app will guide you through taking multiple measurements. Try both different antenna locations and directions. Consider isolation and signal quality when choosing antenna locations.
4. The higher the number, the better your signal will be.
5. Once you’re done, the Wave app will calculate the best location for your outdoor antenna.

If you’re having issues finding the best antenna location, don’t hesitate to contact our support team. We’ll gladly walk you through finding the best location for best results.



# 09 The "Advanced" Tab

One of the best features of the GO X is that it actively listens and decodes the cellular signals before amplifying. You can find out more about the donor signal and the booster's performance under the "Super Channels" sections of the "Advanced" tab.



The "Send Log" button allows you send a diagnostic log from your device to either the RepeaterStore or Cel-Fi support teams.

This area shows the bands currently being amplified. When the device is scanning, the frequencies will change.

The "Super Channels" section lists the two bands being amplified. Select a band to expand the details (as shown).

The "Donor RSSI" value shows the signal strength being received from the outdoor antenna.

The "Donor SINR" is a measure of signal quality. Ideally, you want a number higher than 5 dB here. The higher the SINR, the more bars you'll see. Aiming the antenna better towards the tower, or trying other locations can increase this number.

The "Downlink TX Power" shows how much signal is being rebroadcast. The bigger this number, the greater the coverage area.

The Uplink and Downlink System Gain show the current uplink and downlink amplification of the system. Uplink may sometimes show 0 dB when phones aren't in use. That's normal.

The "Echo Gain" numbers show how much isolation you have between the outdoor and indoor antennas. If either number is at or near 10 dB, you need more isolation between antennas.







## Need help? We're ready and waiting.

Signal boosters aren't always easy to install. In fact, getting everything up and running can sometimes be a pain. But the end result is worth it.

One of the benefits of buying from RepeaterStore is our **lifetime technical support** on every system we sell. We've installed hundreds of these devices ourselves, and can walk you through troubleshooting and fine-tuning your installation for best results.

Simply give us a call, start a livechat on our website, or send us an email. We **love** helping solve tricky install problems.



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