

# SOUNDFREQ<sup>®</sup>

## Design Notes

The Travel Speaker You'll Want to Use Everyday

## Sound Kick 2

Wireless Travel Speaker SFQ-II



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*Before the proliferation of portable Bluetooth speakers, way back in 2012, Sound Kick was our first speaker designed to venture outside the home, capable of traveling, fitting easily into a bag, backpack, or computer bag. The idea was to create a “home away from home,” speaker that you could pack up, take with you, and setup on your desk at work, in your hotel room, or at your friend’s house.*

While we had a clear idea of how we thought Sound Kick would be used, we started to see people using it all sorts of different places. We found that people took Sound Kick almost everywhere they went and when they got home they continued to bring it with them from room to room.

We can design a speaker for certain listening scenarios, but it’s completely up to the listener as to what they do with that design. We’re all for outside-the-box uses, and they actually serve as inspiration to evolve our products to meet uses that hadn’t originally occurred to us.

## ***The Unintended Uses***

Many people who bought the Sound Kick didn’t want to stock up on an arsenal of different speakers for different uses. So Sound Kick evolved from being a travel speaker to an everyday speaker, inside the house and outside of it. With little else in the way of portable speakers in the market until recently, we found people were using Sound Kick in a variety of unintended ways. Through social media, customer service channels, and our own experiences with the speaker, we found people were moving Sound Kick around more than

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we had anticipated. It was going in the bathroom during showers, the kitchen while dishes were being done, and on desks or bookshelves as a home speaker. We also saw people using it as an outdoor speaker that could be used on the patio, at the park, in the backyard, or most anywhere else outside of four walls and a roof.

Since our Sound Kick became a travel speaker capable of going more places than we had originally considered, we made the design of Sound Kick 2 adapt to some of the listening scenarios we came across with the original.

## ***The New Design***

While we set out with a design to improve the original Sound Kick, we didn't need to reinvent the wheel, as the saying goes. Sound Kick's design had garnered awards such as CES Best in Show, and been the subject of critical acclaim for its distinct and versatile form factor. So while we wanted to improve in some areas, we also wanted to stick with what worked for Sound Kick. With an eye towards maintaining the original form factor,

we were able to focus on the details and experiment more through trial-and-error building on the success of our proven design. While it's nice to have a template to work from, as we did, it didn't stop us from turning the evolution of Sound Kick to Sound Kick 2 into a very iterative process. The entire feature set was addressed (as you'll discover below), and this method of designing the product led us to lots of samples. Really. Tons of them.

The biggest issue with tweaking individual aspects of an existing design is that the changes are rarely contained to just that one feature. So each small change had an array of impacts on other facets of the design, which often times wasn't realized until we saw a functioning prototype. That left us with a lot of samples, and a lot of parallel paths to manage. If we had attempted to do this linearly, Sound Kick 2 would probably be hitting shelves some time in 2022.



*A sampling of the test units we worked with on our way to Sound Kick 2.*

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*Sound Kick 2 has a more powerful battery and plays louder, clearer, and with more bass. All in a more durable package.*

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In sweating the small stuff, we were able to create an even better travel speaker that leant itself to everyday use, inside and outside the home. Sound Kick 2 has a more powerful battery and plays louder, clearer, and with more bass. All in a more durable package. And we managed to do it in a way that worked for the unintended ways people were using the original. It wasn't always intuitive turning a travel speaker into a more durable outdoor speaker AND a better home speaker while maintaining its form factor.

But we think we did it, and here's how...

## ***More Durable***

In creating a speaker better-suited to travel and the outdoors, the first thing we thought to do was make a tougher speaker (but avoid the rougher, utilitarian design that we see with so many "rugged" speakers, as we'll discuss later on). The most obvious change was the elimination of the collapsible bass chamber on the original Sound Kick. While it served an important purpose in creating more volume (space, that is) for more volume (sound-wise), it was a moving part, and the moving parts are often the weakest link in products for a couple reasons. First

of all, when people were moving the original Sound Kick, they would often collapse the bass chamber to make it easier to hold. Doing this stopped the playback of music, which wasn't ideal. So the elimination of the bass chamber allowed listeners to move the speaker without stopping the music.

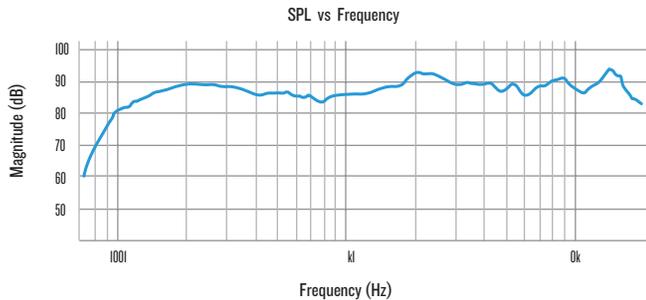
Secondly, this moving part made for a small opening that not only created a ceiling on air pressure (see the next point), but makes it vulnerable to elements like dust, humid air, or water. This really wasn't an issue for Sound Kick, but as people got more adventurous with their uses, we wanted to take extra precautions. When you go to fix a chain, you start with the weakest link. And for the purposes of outdoor and bathroom/shower use, that chamber was our weakest link.

We discuss the waterproof treatment more in a second, but another concern of anyone designing a more durable speaker is its actual strength. We never designed Sound Kick 2 to be run over by a car or dropped off a building, but we wanted to reduce the likelihood that it would get damaged or cracked falling to the ground or even getting stepped on. That metal grill goes a long way, as does the corrugated housing, which makes it more resilient to being dropped or crushed. And if you'd rather be safe than sorry, we've got three anchor points to attach which is a new feature as well.

## ***Better Sound***

Eliminating the retractable bass chamber actually was an opportunity for us to

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*Sound Kick 2: SPL vs Frequency Chart*

increase the total volume of Sound Kick 2, but challenged us in maintaining the “boom” of the speaker. The bass chamber allowed for more interior volume, and thus more air movement, we had to compensate for that deletion. However, the elimination provided its own solution in that regard, because a new non-retracting interior bass chamber would actually allow us to increase the pressure inside the device. Increased air pressure leads to more powerful sound. We also incorporated a passive radiator that had waterproofing treatment to further up the ante in the bass department. The original Sound Kick used porting for the speaker mechanism, but with any degree of water exposure, a waterproof passive radiator was the only way to go, since that design could keep water out, whereas a ported design is similar to a hole in a ship. So we changed the way we created the bass, and ended up getting a little more boom and volume out of the speaker, which we don’t think anyone will object to.

## ***Water-Resistant***

When developing Sound Kick 2, our primary focus wasn’t on creating a waterproof

speaker, but rather on improving the sound quality and utility of the original design. Initially we were concerned that coating the drivers (the actual “speaker” part of our product) with a waterproof treatment would adversely affect their movement, and thus the sound quality. We ran the waterproofing on a parallel path while continuing to develop the Sound Kick 2 as a non-water-resistant speaker. Those parallel paths converged when we applied a new treatment that allowed for an IPX4 rating of water-resistance that didn’t compromise sound quality.

The result is a speaker that doesn’t sacrifice sound quality or responsiveness to withstand water. Granted, we don’t recommend taking Sound Kick 2 scuba diving, but a steamy shower or some rain won’t stop the music in the short or long term, so feel good about including it in your outdoor travels. Even if they’re only to the pool, or a backyard with automatic sprinklers.



*The water-resistant Sound Kick 2 is completely at home poolside, on patios, or in kitchens or bathrooms.*

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## *Better Battery Life*

In creating a better travel speaker, our attention, for obvious reasons, went to the battery. Simply put, the battery life went from 7 hours to 8 hours. However, there's a little more to it than that. After realizing that this speaker was getting further and further from the home, and outdoors (which

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*In short, because Sound Kick 2 is used throughout the home, we'd rather it actually **BE** durable rather than just **LOOK** durable.*

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can be noisy), we made sure that maximum volume can be maintained when the speaker goes from AC power to battery mode. After all, outside is where you'll probably need the most volume and have the least access to wall power, so this made sense to us. So whereas the original gave 7 hours of battery at a slightly reduced volume, Sound Kick 2 will give you 8 hours at an even higher volume. So the difference is a little bigger than advertised in that regard.

One of the favorite features of the original was the ability to charge a phone from Sound Kick while on battery power. A few years later, with the advent of tablets and bigger phones, we found that a bigger battery wouldn't just help the music keep coming from Sound Kick 2, but also allow for a more powerful (and thus faster) charge for phones and tablets alike.

## *Updated Aesthetic*

We took some design and aesthetic cues for Sound Kick 2 from [Pocket Kick](#) our smaller, portable speaker. We smoothed the edges, making it easier to hold, grip and carry, which gave it a more inviting touch, and we eliminated the retractable bass chamber, which gives Sound Kick 2 a cleaner, more solid feel that lends itself well to both portability and home décor. Ultimately, the look of Sound Kick 2 was driven by its functionality. However, since a big part of this speaker's use is in the home, we didn't want to have durability translate to a bright, sporty veneer that so many speakers do these days.

With many speakers designed to look sporty, you may get something that doesn't function as well as Sound Kick 2 outside of the home, and something that looks way out of place in it. We didn't see much upside to adopting that approach. Many speaker manufacturers seem to think that their customers are in a state of arrested development and are just looking for something with an over-the-top design to make it appear to be a rugged speaker, without even incorporating much of the



*Sound Kick 2 (Background) alongside the smaller Pocket Kick*

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water resistance and durability that we incorporated into Sound Kick 2. In short, because Sound Kick 2 is used throughout the home, we'd rather it actually BE durable rather than just LOOK durable.



*The original Sound Kick (SFQ-04)*



*Sound Kick 2's new design results in not just a better travel speaker, but an even more versatile home speaker as well.*

The deletion of the bass chamber (which had to be expanded for the speaker to operate), meant not only a slimmer profile for portability, but a smaller footprint to set on a desk, counter, or even a windowsill. The old bass chamber served as a pretty handy kickstand for the speaker to lie back on, projecting music at an angle pointing upward. While the new speaker can sit upright with no protrusion, it's also got a much smaller kickstand should you still want to lean Sound Kick 2 at an angle while it plays. And with no bass chamber expansion required to play music, you can always carry or set Sound Kick 2 just the way it is without the music stopping.

Sound Kick 2 came as the result of listening to the feedback of Sound Kick users across a variety of avenues. We aren't able to accommodate every use out there with every speaker we make, but we're happy that people saw the original Sound Kick as even more versatile than we did. Taking cues from our users, we set out to make sure that Sound Kick 2 saw to those uses even better than the original did. That means a more durable, louder, water-resistant speaker with a simpler refined aesthetic for the home, or wherever your travels take you.

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