

How community Bluetooth® tracking works

ONE-KEY™ uses Bluetooth® Low Energy (BLE) to help you keep track of your tools and equipment. In this article, we'll explain how community Bluetooth® tracking works and how Milwaukee has designed its products with this in mind.

The idea of using shortwave radio frequencies to make wireless headsets possible was first dreamt up by Swedish scientists in the 1990s. Now, the technology known as **Bluetooth®** is everywhere and essential, forming invisible connections between all kinds of devices—from tablets and speakers to smartphones and laptops. As the digital frontier expands, so too grows the need for manmade objects to be able to seamlessly communicate with each other, and preferably without tangled webs of crisscrossing wires.

The tools of the trade in construction are no different. It's not on the jobsite of tomorrow, but the job site of *today* where you should expect to find a new generation of cutting-edge tools interlinked via ad hoc Bluetooth® networks.

How Bluetooth® works

Bluetooth® doesn't leap to mind when you think of tracking technology. After all, its most common uses are for hands-free headsets, or linking smart devices with speakers and headphones. Odds are, when you think of tracking, you instead think of GPS, the tech behind the navigation features of your smartphone. But Bluetooth® proximity sensors—which make your wireless earbuds or your speaker sync with your mobile device—similarly come in handy to proximate where things like tools and equipment are.

There are important differences between [GPS and Bluetooth® tool tracking](#). For example, [Bluetooth® tool tracking](#) offers multiple advantages over GPS tool tracking systems:

- Fairly inexpensive (unlike GPS)
- Not a huge drag on your smartphone battery (unlike GPS)
- Unlike GPS trackers which require a line of sight to the sky, *Bluetooth® trackers* are well-suited for warehouses as well as remote locations outside the range of cell towers

For the purposes of this article, however, all you need to know is that Bluetooth's tracking functionality parts ways with GPS in one key respect: it doesn't rely on the signal from telecommunication satellites.

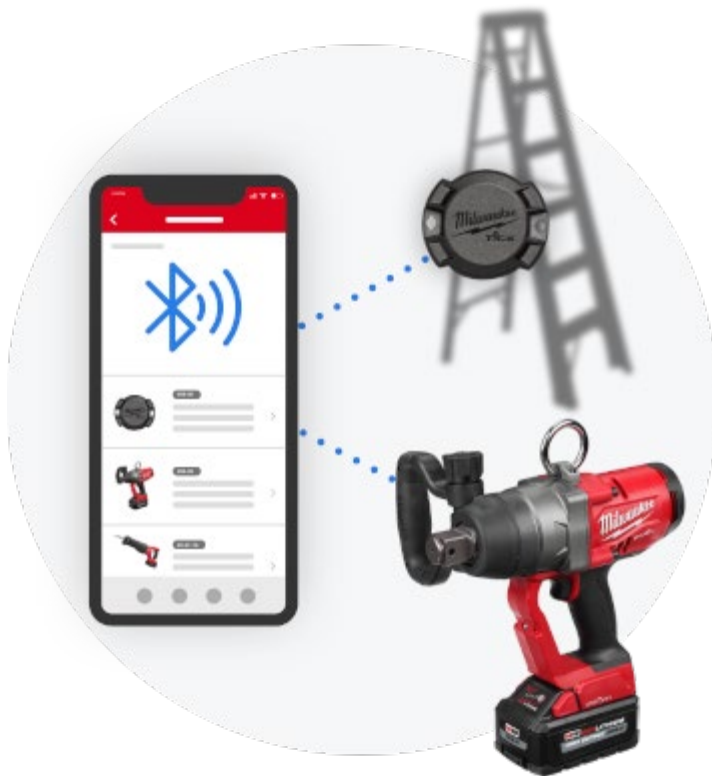
Bluetooth® tracking works on a much more localized level, relying instead on the shortwave radio signals relayed between compatible devices on the ground. When activated, the Bluetooth® chips in your phone or tablet create a short-range area of effect that allow different kinds of devices to wirelessly share information with each other. Though the signal starts off as weaker than GPS, it can be boosted with the addition of more users, and is more dependable in that it doesn't rely on constant connection to a satellite in orbit.

When two compatible devices pair together via Bluetooth®, they form what's called a **piconet**, which is just a fancy term for a small ad hoc computer network. Individual piconets of Bluetooth® linked devices can then be combined to form larger networks called **scatternets**.

Which brings us to **community Bluetooth® tracking**, the concept behind One-Key's tool tracking platform. With Milwaukee's **One-Key** digital platform, we use Bluetooth® technology to search and find the locations of entire inventories of tools in physical space. This is what's known as **community Bluetooth® tracking**, a crowd-sourced approach to finding that enlists the support of other nearby Bluetooth® devices passing within range of each other to anonymously send signals and location updates. Think of our network as a huge search party you can call upon should your Bluetooth® tracker or One-Key compatible tool get disconnected. And while our One-Key tools come with this functionality built-in, we've also made it possible for you to use Bluetooth® to keep track of other non-compatible tools in your inventory using TICK™ trackers.

How does Community Bluetooth® tracking work with One-Key tools?

A kind of digital docking bay for your tools, One-Key also empowers you to track your tools in physical space. Milwaukee has an extensive line of One-Key smart tools that come with built-in Bluetooth® microchips, which allows them to link up with your smartphone, computer, or tablet. You can then use the One-Key app to track the locations of your tools within a **100-foot range**.



This is where **community Bluetooth® tracking** comes in. Your ability to more accurately pinpoint the location of your tool in time and space grows in direct proportion to the size of your Bluetooth® community, or network.

Here's two scenarios to illustrate what we mean:

1. Let's say you've been at a job site for about an hour and you've lost your One-Key compatible tool. You know the tool's Bluetooth® function is always on, so you pull up the free One-Key app on your phone. Since you're the only person on your team with the One-Key app, the map displayed on your screen will show you where your tool was when it was last within 100 feet of your phone. The app is currently telling you that your tool is still in your work truck. But you've already looked, and know it's not there. The tool's nearby, perhaps pulled off of your truck by one of your crew members to complete a job and not put back. The One-Key app, utilizing your device's Bluetooth® connection and location data, helps you narrow down your search to a 100-ft range, so as you walk around the jobsite, you'll be able to stumble on where your tool ended up.
2. In this version, every member of your 10-person team has the One-Key app downloaded onto their phone. This means that when you pull up One-Key, the location displayed now shows you where your tool was when it was last within 100 feet of *any of the 10 smartphones* on your jobsite. The app now tells you that your tool is with one of your teammates who's currently working on the job site.

This is what we mean when we talk about community Bluetooth® tracking. The bigger your Bluetooth® community or network, the stronger your ability to keep better track of your tools.

What about tools that don't have built-in Bluetooth® microchips?

Your tool doesn't need to be made by Milwaukee or have built-in Bluetooth® functionality to still be trackable by the One-Key community. That's what the TICK™ tracker is for. Weather, dust, and water-resistant, the TICK™ is a compact heavy-duty Bluetooth® tracker that you can glue, rivet, screw, ziptie, or strap to any tool or item in your inventory.

One-Key's community Bluetooth® tracking function is a reliable alternative to GPS that you can use to keep track of your One-Key tools as well as your non-Bluetooth® compatible inventory. The broader your Bluetooth® community, the stronger your ability to track them.