

THE 5G MEGAGUIDE

Everything You Need To Know About 5G



- What Is 5G?
- Why is it dangerous?
- How can I protect my family?
- How Can I locate 5G Cell towers?
- ...And so much more

By Christian Thomas



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Visit EMFAcademy.com to learn everything you need to know about EMF radiation and 5G, including tools and strategies to protect yourself and your family.

5G Radiation Dangers

This book is the result of nearly a hundred hours of research, and weeks of writing,

My hope is that this can be the definitive source for information about the danger that 5G radiation will bring to the world as it continues to be rolled out in the future.

Bottom line... 5G is here, or at least beginning to be. 5G is now live and active in many cities around the world.

However, even if that is the case, it will likely still be another year or so before the majority of phones will be primarily connected to 5G.

The increased radiation danger will be a result of both the new technologies and the dramatic new landscape of infrastructure that 5G will require.

Let's start by summarizing why the radiation from 5G wireless will be dangerous.

Why Will 5G Radiation Be Dangerous? - A Summary

The current portion of the radio frequency spectrum used by 1G, 2G, 3G, and 4G LTE (what we currently have) is crowded, and will not be able to support the sheer quantity of devices coming online every day.

That means that 5G will utilize millimeter waves in the 30-300 gigahertz frequency, which hasn't been used in the past. **These higher frequencies have short wavelengths and are categorically more dangerous.**

The shorter wavelengths also do not travel as far, or as well through objects. This means that 5G will require hundreds of thousands of small cell towers to compensate. **You'll likely see small micro-cell towers on street signs, light poles, on the sides of buildings, on homes, and just about anywhere else the telecom companies can legally place them.**

So, not only will it be a much higher frequency, shorter wavelength form of electromagnetic radiation, it will also be in much closer proximity, increasing our exposure and the danger.

With the current 4G LTE networks, we can simply use resources to locate cell towers and choose our homes accordingly. This will likely be near impossible in the future with the sheer proliferation of 5G cell towers.

Alright, now let's talk a little bit about what 5G really is, so we can better understand why it could be exponentially more dangerous than our current 3G and 4G wireless.

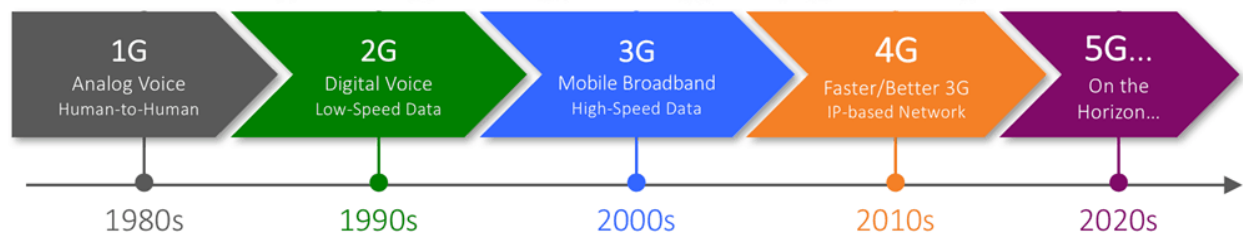
Why Is There A Need For 5G?

So, if you've had a cellphone for quite a few years as I have, then you probably are familiar with the various generations of wireless technology. 5G doesn't stand for 5 GHz, it stands for the 5th Generation of telecom wireless.

1G was the original generation and essentially just allowed for analog voice between callers. 2G, the second generation introduced in the 1990's first allowed data to be sent in the form of simple text messages.

3G allowed for high-speed internet through faster data transfer. This gave us a connection to the internet and opened up a whole new world for smartphones.

4g expanded on this, allowing for significantly faster data transfer. This allowed us to watch Netflix practically in the middle of nowhere and made it possible to scroll endlessly through social media.



Now, we've all been using 4g LTE for about the last 10 years, and for the most part, has worked quite well. However, with a growing network of smart devices and smartphones, this network is getting extremely crowded.

The speeds that 4G support are also not keeping up with technologies demands. With Artificial Intelligence controlling more and more things, and autonomous vehicles hitting the roads, our current network isn't cutting it. These types of devices not only require faster speeds and more bandwidth, but also significantly lower lag-time, or latency.

Which brings us to the advent of 5G, which has been researched and talked about for nearly a decade, but has only in the last few years been remotely a reality. Already being tested in several cities, 5G is closer than ever. Many phones are already out that will support it.

However, it isn't entirely here yet, and that is mainly an infrastructure issue. However, likely sometime in 2020, companies like Verizon and AT&T will have separate hotspots available for purchase that will allow you to harness the speed of 5G

So, now you understand a bit of why 5G came about, let's dive a bit deeper into what exactly it is, and how it works.

What Is 5G, and How Does It Work?

(Warning: gets a bit technical)

All generations of mobile networks have used similar cellular infrastructure. The service area that you are connected to is actually part of a digital geographical grid called a "cell." Data is transferred from your device to a local cell tower in packets. This data is then transferred via a telephone network and the internet to wherever it was being sent.

As you move around, these cell-towers are capable of handing you off without a disruption in your phone call, or the data that you are receiving. You've probably noticed the many cell towers in your area or your city. That is because these large cell towers are able to maintain a connection to your device over long distances, and through many objects due to the wavelength of the frequency being used.

The downside is that the 4g LTE network that these cell-towers currently support, is becoming outdated as new technology demands enter the market.

How Fast Will 5G Be?

5G, or the fifth generation of wireless, will solve this speed issue. With data transfer rates of up to 10 Gigabytes per second, you will be able to download an HD movie in just a few seconds. This means that you will have internet that is 100-200 times faster than the current 4G networks support.

Not only will the mobile network for 5G be much faster, but possibly more importantly, will have far lower latency, or lag-time. Imagine you are playing a game on your phone, and you tell it to make an action. Currently, this takes around 40-50 milliseconds to complete. 5G will allow latency as low as 5 milliseconds. Now, for games, this is not a big deal and we hardly notice it.

However, take this and expand it into emerging technologies such as AI and autonomous driving. Lower latency means that vehicles can respond that much faster to new inputs of data, making them safer to drive.

So, as far as speed, latency, and connectivity go, 5G will have some huge advantages, but will this be worth it? Don't worry, later in the book we'll get to some of the science and research behind why 5G radiation could potentially be so extremely harmful.

How Will 5G Work?

5G will use what is called millimeter waves that fall in the higher frequency ranges of 30 to 300 GHz. The network your phone is currently connected to uses microwave bands between 700 MHz and 3 GHz.

First of all, since the range of 30-300 GHz is essentially unused, carriers will have infinitely more bandwidth to provide users with. Not only that, but these shorter waves will allow for sending and receiving data to be transmitted on a single carrier wave simultaneously.

One of the problems with these Millimeter waves is that they are not nearly as good at penetrating things as our current cell towers are. So, the radiation from the radio waves gets blocked by simple things like trees and buildings.

This means that instead of having large high-powered cell towers every half-mile or so, we'll have thousands of smaller antennae on buildings, street signs, lamp posts, etc.

Having these small cell towers nearby is a double-edged sword. Although they will allow the facilitation of these high network speeds, they will also be closing the gap on 5G radiation, putting it closer to our bodies than ever.

Massive MIMO

These small millimeter wave antennae will also allow for something that you saw in the video, called massive MIMO (multiple-input multiple-output). This essentially means that instead of data passing back and forth on a single radio wave, data can be passed from a single device to multiple antennae at the same time. This allows for faster transfer of data.

In order to keep this all straight, an algorithmic technique called Beamforming will be used. This essentially means that the best route for these data arrays will be calculated constantly, changing as your device moves around. This allows the thousands of small 5G antennae to know where to send the data at any given time.

Now, as you'd imagine, the insane amount of new infrastructure that will be required will make this extremely expensive to install. So, most experts believe that it will only initially be available in larger cities, where carriers can actually see a return on their money.

It will likely be some time before we see 5G in rural areas. Some pundits believe that it may never be financial viable to put 5G in very rural areas.

So, if you are worried about 5G radiation like I am, that is one thing you could always consider, get just outside the city.

Danger Of RF Radiation

Now, when it comes to the dangers of RF radiation that 5G will bring, there are two things we need to talk about.

- **General Risk of RF Radiation Exposure**
- **Specific Risk of 5G Exposure**

So, I want to break these down and walk you through the studies for each one that show us just how dangerous this new technology will be.

Let's start by looking back at the studies showing how cell-phone and cell-tower radiation harm the body.

RF Radiation Studies

You've probably heard of a few of the big studies, and I won't cover them all in this, but I wanted to give a general summary of some of the science and evidence showing that high levels of exposure to RF radiation from cell-phones and cell-towers really can be harmful to your health.

Interphone Study - This extensive study looked at over 5000 cases of Glioma and Meningioma to determine what level of cell-phone use was observed. Ultimately they found that those with the highest exposure to RF radiation from cell-phones did have an increased chance of developing brain tumors during their lifetimes.

This study along with a mountain of other evidence was part of the reason that the World Health Organization classified RF radiation as a "possible carcinogen" in 2011, shortly after the study was published.

"The Influence of Being Physically Near To A Cell Phone Transmission Mast On the Incidence of Cancer." - I know, it's a long name, but it is an extremely important study showing how being physically close to cell-towers of any kind, can increase your risk of certain cancers.

This is particularly important with the coming of 5G, as our proximity to these micro-cell towers will be much closer.

The study, conducted in 2004 in Germany, looked at the case histories of 1,000 different patients between the years 1994 and 2004. They classified the participants into groups based on how close to cell-towers they lived.

The study ultimately found that there was a significant correlation between how close people lived to these cell-towers and their risk of developing cancer.

They wrote:

“The proportion of newly developing cancer cases was significantly higher among those patients who had lived during the past 10 years at a distance of up to 400 meters (1,300 feet) from the cellular transmitter site, which has been in operation since 1993, compared to those patients living further away, and that the patients fell ill on average eight years earlier.

Ramazzini Study - Perhaps one of the most frightening studies actually came out quite recently. The well respected Ramazzini Institute out of Italy studied how frequent exposure to RF radiation at levels consistent with legal cell-tower radiation affected their lives.

The **Environmental Health Trust**, a respected virtual think-tank and non-profit did a great job summarizing the results, so I'll **use their words** and quotes instead of my own:
(Really take a second and read this, the conclusions are quite telling)

The Ramazzini study exposed 2448 Sprague-Dawley rats from prenatal life until their natural death to “environmental” cell tower radiation for 19 hours per day (1.8 GHz GSM radiofrequency radiation (RFR) of 5, 25 and 50 V/m). RI exposures mimicked base station emissions like those from cell tower antennas, and exposure levels were far less than those used in the NTP studies of cell phone radiation.

“All of the exposures used in the Ramazzini study were below the US FCC limits. These are permissible exposures according to the FCC. In other words, a person can legally be exposed to this level of radiation. Yet cancers occurred in these animals at these legally permitted levels. The Ramazzini findings are consistent with the NTP study demonstrating these effects are a reproducible finding,” explained Ronald Melnick Ph.D., formerly the Senior NIH toxicologist who led the design of the NTP study on cell phone radiation now a Senior Science Advisor to Environmental Health Trust (EHT). “Governments need to strengthen regulations to protect the public from these harmful non-thermal exposures.”

“This important book from one of the most acclaimed institutions of its kind in the world provides a major new addition to the technical literature indicating strong reasons for concern about electromagnetic radiation from base stations or cell towers,” stated Editor in Chief of Environmental Research Jose Domingo PhD, Professor of Toxicology, School of Medicine at Reus University, Catalonia, Spain.

“The US NTP results combined now with the Ramazzini study, reinforce human studies from our team and others providing clear evidence that RF radiation causes acoustic neuroma (vestibular schwannoma) and gliomas, and should be classified carcinogenic to humans,” stated Lennart Hardell MD, PhD, physician-epidemiologist with the Department of Oncology, University Hospital, Örebro, Sweden, who has published extensively on environmental causes of cancer including Agent Orange, pesticides and cell phone radiofrequency radiation.

“The evidence indicating wireless is carcinogenic has increased and can no longer be ignored,” stated University of Toronto Dalla Lana School of Public Health Professor Emeritus Anthony B. Miller MD, Member of the Royal Colleges of Physicians of Canada and the UK, and Senior Medical Advisor to EHT who is also a long-term advisor to the World Health Organization.

I could go on and on about all of the studies and evidence linking RF radiation to negative health effects, but I think that should suffice for the purposes of this book.

Instead, I want to spend some time talking specifically about how 5G Radiation has been shown to affect our health. Since it has not been released on a wide-scale, our exposure to it and the ability to study its effects has been limited. However, there is still plenty to look at that should make you nervous.

5G Radiation Danger - What We Know

Alright, now it's time to talk specifically about some of the ways that 5G radiation will specifically be harmful.

Dr. Moskowitz Warnings

To start with, I want to quote a bit of what Dr. Joel Moskowitz, a public health professor at the University of California [told the Daily Mail](#) about how 5G will be harmful.

'The deployment of 5G, or fifth-generation cellular technology, constitutes a massive experiment on the health of all species. Because MMWs are weaker than microwaves, they are predominantly absorbed by the skin, meaning their distribution is quite focused there.'

Since skin contains capillaries and nerve endings, MMW bio-effects may be transmitted through molecular mechanisms by the skin or through the nervous system.

He also told Daily Mail Online that he's concerned that '5G will use high-band frequencies, or millimeter waves, that may affect the eyes, the testes, the skin, the peripheral nervous system, and sweat glands.'

'Millimeter waves can also make some pathogens resistant to antibiotics,' he added.

Dr. Moskowitz is not alone in his apprehensions.

The International Society of Doctors for the Environment, its subsidiaries in 27 countries and more than 200 doctors and scientists are all calling for a stop to be put to the rollout of 5G, 'due to concern that 5G radio frequency radiation will have adverse health effects,' Dr. Moskowitz says.

"So far, their warnings have gone unheeded."

Dr. Moskowitz comments to the Daily Mail are a frightening warning about just some of the physical effects experts and scientists expect to see with the continued rollout of a 5G cellular network.

Now I want to a really important letter.

Dr. Yael Stein Letter of Opposition to 5G

In 2016 a Physician named Dr. Yael Stein of the Hadassah Medical Center in Jerusalem [wrote a letter](#) opposing the implementation of 5G and the Millimeter Wave Technology it would utilize.

He addressed the letter to the United States Federal Communication Commission, the U.S. Senate Committee on Health, Education, Labor and Pensions and the U.S. Senate Committee on Commerce, Science, and Transportation.

Dr. Stein began the letter by saying:

"A group of physicists from the Hebrew University in Jerusalem, together with several physicians, have researched "G5" millimeter wave technology (Sub Terahertz frequencies) and its interaction with the human body. I am a physician who participated in this research."

I won't include the entire letter in this book but will include all of the group's conclusions, as they are extremely telling of the danger that 5G radiation will expose people to.

The group's conclusions were:

1. Public exposure to millimeter waves, in the sub-Terahertz frequency range, is currently less common. If these devices fill the public space they will affect everyone, including the more susceptible members of the public: babies, pregnant women, the elderly, the sick and electro hypersensitive individuals.
2. Human sweat ducts transmit and perhaps also receive electromagnetic waves that reflect the person's emotional state, as an extension of the sympathetic nervous system that innervates sweat ducts
3. These newly suggested physiologic and psychological functions of human sweat ducts have not yet been researched by neurophysiologists or by psychologists
4. Computer simulations have demonstrated that sweat glands concentrate sub-terahertz waves in human skin. Humans could sense these waves as heat. The use of sub-terahertz (Millimeter wave) communications technology (cellphones, Wi-Fi, antennas) could cause humans to percept physical pain via nociceptors.
5. Potentially, if G5 WI FI is spread in the public domain we may expect more of the health effects currently seen with RF/ microwave frequencies including many more cases of hypersensitivity (EHS), as well as many new complaints of physical pain and a yet unknown variety of neurologic disturbances.
6. It will be possible to show a causal relationship between G5 technology and these specific health effects. The affected individuals may be eligible for compensation.

There is a host of research showing the potentially harmful effects of pulsed MMV's, but I don't want to bog this chapter down too much. However, the group over at saferemr.com put together a [good compilation of research and letters related to 5G](#) radiation that I would encourage you to check out when you have a chance.

Or, if you'd like to read a large collection of letters sent by various doctors and scientists on the dangers of 5G radiation and cell towers, the [Environmental Health Trust put together a great list](#).

What Experts Are Saying About 5G Radiation

Along with the research, hundreds of letters have been sent by scientists, doctors, and researchers, to organizations around the world calling for a halt to the rollout of 5g.

A group of over 250 scientists from around the world in 2017 wrote and published a declaration called the "[5G Appeal](#)" asking for a moratorium on the building of 5G infrastructure. This was a followup to a previous letter sent to the United Nations with a similar request.

They said in part:

“We recommend a moratorium on the roll-out of the fifth generation, 5G, for telecommunication until potential hazards for human health and the environment have been fully investigated by scientists independent from industry...RF-EMF has been proven to be harmful for humans and the environment.”

[You can read the entire published appeal here.](#)

A few other notable comments made by experts (thanks to EHtrust.org for putting these together)

“There is a substantial body of evidence that this technology is harmful to humans and the environment. The 5G millimeter wave is known to heat the eyes, skin, and testes... Of particular concern are the most vulnerable among us — the unborn, children, the infirm, the elderly and the disabled. It is also expected that populations of bees and birds will drastically decline.” [-Letter from oncologist Lennart Hardell MD & Colleagues](#)

“A growing body of scientific literature documents evidence of nonthermal cellular damage from non-ionizing wireless radiation used in telecommunications. This RF EMR has been shown to cause an array of adverse effects on DNA integrity, cellular membranes, gene expression, protein synthesis, neuronal function, the blood-brain barrier, melatonin production, sperm damage, and immune dysfunction”. [-Dr. Cindy Russell 2018 paper entitled “5 G wireless telecommunications expansion: Public health and environmental implications.”](#)

“This is a unique situation in the history of the humankind when the whole human population will be exposed to man-made devices emitting non-ionizing radiation that was insufficiently tested before deployment. What is and what will be the responsibility of the scientists, decision-makers and industry leaders who permit deployment of insufficiently tested technology that will affect us all? The answer is simple – no responsibility... because if any health problems will show up in the future, these will most likely take tens of years of time to manifest and, by then the persons that currently enable deployment of insufficiently tested radiation-emitting 5G technology will be retired or the proverbial ‘six feet under.’” [-Dr. Darius Leszczynski, July 18th, 2018 in Assumption of Safety for 5G by Government Agencies, No Science.](#)

The Information War Over 5G

It should not come at all as a surprise to you that telecommunication companies, cell-phone manufacturers, or just the technology sector as a whole does not want you to know about just how powerful 5G will be.

They don't want you to fully understand that the radiation from 5G will likely be far beyond anything we can currently understand or comprehend.

Just know, that this will likely be an information war between those companies and industries, and the parents, scientists, and researchers who feel that this will likely be a true danger.

Recently, Verizon put up a new website called "[Let's 5G](#)." The entire purpose of the website is to advocate for the immediate rollout of 5G. The pictures, books, and information, are only focused on the positives. It is marketed towards young people and encourages them to contact their state and local officials.

Take a look at this screenshot from their website:



They are also giving deceptively simple answers (in my opinion) to important questions.

Take a look at the screenshot below, which is the entirety of their answer to the question, "How does 5G Work?" If you read the above section about how 5G actually works then you understand that this is overly simplified, and does not at all touch on the danger that these "small cell" antennas pose.



Answer:

The same way garage door openers, TVs, baby monitors and every past generation of wireless have all worked – with radiofrequency (RF) waves. 5G uses a dense network of "small cell" antennas about the size of a backpack. Designed to blend into the environment, these 5G antennas hide in plain sight on things you never notice – like utility poles and street lamps.

Although what they mention in that answer is technically true, they leave an enormous amount of information out and don't highlight how having radiofrequency radiation emitted from places like "utility poles and street lamps" is actually extremely harmful.

Going on, they answer the question "Are all of those 5G antennas a health concern?" Take a look below.

Are all of those 5G antennas a health concern?

Answer:

All equipment used for 5G must comply with federal safety standards. Those standards have wide safety margins and are designed to protect everyone, including children. Everyday exposure to the radio frequency energy from 5G small cells will be well within those safety limits, and is comparable to exposure from products such as baby monitors, Wi-Fi routers, and Bluetooth devices.

Again, all technically true, but leaves out some of the most important information. They do not say that it is safe, just that it meets federal safety standards, which you've seen in this book are widely refuted by many experts.

Just like SAR ratings, these federal safety standards are not immune to the pressure and lobbying of telecommunications companies and cell phone manufacturers.

Not to mention that the federal safety standards they are mentioning have not been tested against a wide rollout of 5G since it has only begun its testing phases in cities. What usually happens in these situations is that the technology is implemented far in advance of current safety standards, and then those standards are slowly updated as needed.

Meanwhile, the public at large is exposed to large, un-researched amounts of 5G radiation and millimeter waves the likes of which we have never seen.

Hopefully, this helps you to understand the information war that will continue between those who stand to benefit from 5G implementation and those who feel it could be an extreme hazard.

How To Protect Yourself (And Your Family) From 5G Radiation

So, when we talk about the dangers of 5G, and how we can protect ourselves, we have to approach it from a bit of a holistic approach. This is mostly because it will be so pervasive in our everyday lives.

So, we need to talk about how to protect our homes from the smaller, more common, cell towers that are being built, we need to protect ourselves from our cell-phones that will be communicating with these towers, etc.

So, I'll do this as a step by step approach.

1. Use Distance To Your Advantage

I talk about this in my posts all the time, but there is something called the [inverse-square law of physics](#), and it's a super important concept to understand when we're talking about protecting ourselves from EMF radiation.

Essentially what this law states, is that as we double our distance from a source of radiation (including EMF radiation like 5G) we *quarter* our exposure to it. Think about that for a minute. Essentially what this means is that the damage that EMF radiation causes, exponentially decreases as we move further away from it.

So for example, even the difference between holding a cell-phone against your head, or out in front of you on speakerphone is monumental protection from that radiation.

As 5G (or 5th generation of cellular networks) continues to roll out in major cities, you'll find it is all but unavoidable. Not only your cell-phone will be connected, but eventually nearly all the technology around us, including our home routers.

So, what the most important way we can protect ourselves from 5G is to get as much distance from these devices as possible.

Here are some simple ways you can do that:

- **At night, be sure you don't keep your phone with you**, especially under your pillow or right on your nightstand. Our phones are one of our greatest EMF exposure risks, and as 5G continues to be rolled out, keeping our phone away from our bodies when we're sleeping is one of the smartest things we can do.
- **Keep your phone off of your body**. Whether you put it in your pocket, in your bra, or anywhere else on your body, you'll be much better off keeping it in your backpack, purse, briefcase, or somewhere else. If you can't give this up, be sure to get a quality EMF protection case, and be sure the protective side is facing your body.

- Instead of holding your phone up to your head when you're talking, consider either using the speakerphone or getting a pair of air tube headphones to talk with. This will keep your phone away from your head, and reduce your radiation exposure.
- **Keep your router out of rooms you sleep or spend time.** Although it won't be an immediate change, 5G will be so fast, that many homes will opt to use it for their primary internet connection. Keeping this router as far away from you as possible is one of the best things you can do. We'll talk more about this later.

There are countless examples that I could list, but it would take over this chapter. Here is the main takeaway though:

Whenever you can get distance from a source of EMF radiation, you are protecting yourself.

This will be especially true as 5G continues to advance forward and becomes more and more available in various cities.

2. Protect Your Home From 5G

Alright, now it's time to talk a little bit about our home, our sanctuary, the place we sleep and relax and spend time with family.

Now, it may not be the first place you think of when it comes to the dangers of 5G, but I can assure you (especially if you live in a large city) that you will eventually almost certainly have a 5G cell tower very close to your home.

How 5G Will Infiltrate Your Home

5G will require the use of new bandwidth's not currently used by 4G LTE. Although these frequencies provide the speed that this new network wants, they are extremely poor at traveling long distances or penetrating physical barriers like homes, trees, buildings, mountains, etc.

So, whereas our current network works mostly off of large cell towers spaced fairly far apart, 5G will utilize hundreds of thousands of small, extremely powerful, small-site relays and towers. So, instead of a large structure they made look like a tree, you'll see small devices on street signs, telephone poles, sides of buildings, and just about anywhere else they can get away with putting them.

This means that our previous step, gaining distance from 5G for protection, will become harder and harder as more infrastructure is built and implemented.

What this means for your home, is that this will be difficult to keep out.

The next thing that we have to think about when it comes to our homes and 5G, is all of the 5G connected devices that we'll have inside.

Part of the reason that we as a society are moving towards 5G, is that we have so many more smart devices than we ever have had in the past. The Internet of Things (IoT) is the network that allows devices to communicate with us, with each other, and with the internet.

These devices are crowding the current frequencies, and 5G is an attempt to relieve that. So, you should expect that not only your phone will be connected, but your smart-meter, your router, and many of your home appliances as well.

So, one of the best thing we can do to protect our homes from 5G, or just EMF radiation in general, is to try to be wise about which devices we are bringing into our homes. Do you really need a smart fridge, or a smart-microwave, or a smart-toaster?

Ok, so maybe not all of those will be a thing, but you get the point. Just think through whether the increased radiation exposure is worth the convenience that these new devices will bring.

5G Routers and How To Protect Yourself

Now, a lot of people have been asking in the [EMF Academy facebook group](#) as well as other groups about the "5Ghz" WiFi network that is already in their homes.

To clarify, this is *not 5G* whatsoever. 5Ghz, along with 2.4Ghz, are the frequencies of the most common network that WiFi has been using for a long time, and has nothing to do with 5G.

5G in the context of this book stands for the fifth generation of cellular networks and has nothing to do with the frequencies it will use.

Now, that does not mean that your router won't eventually be utilizing 5G networks to give internet in your home, in fact, many experts predict that this will be extremely common in the next 5 years or so.

Since the 4G LTE that your phone currently is connected to already has speeds faster than many homes, and 5G will be up to 100 times faster, you can expect many homes and business to want to use this.

We may see new routers that push this network, or it could be that our current devices are able to push these speeds, we aren't really sure yet. However, what we do know, is that we'll want to protect ourselves from these "5G routers."

There are many ways to do this, and I don't want to take up the whole chapter with it, so I'll point you to some other resources.

The best thing you can do is to hardwire internet to your home instead of using WiFi. This means that you will still be able to get extremely fast internet to most of your devices, but you won't be exposed to the RF radiation from the router. I wrote up an [entire guide on exactly how you can do this](#) you should check out.

5G And Smart Meters

Smart Meters are a hot topic when it comes to the dangers of EMF radiation. This is mostly because many people don't have a choice as to whether they are installed, and the almost certainly pose a health risk.

If you don't already know, smart meters are the newer version of the old analog utility meters. Smart meters communicate remotely with the utility company using cellular networks primarily. Not only does this relay data about your usage to the companies, but also allows them to control your gas, electricity, or water, remotely. In doing so, it emits a large amount of EMF radiation into your home.



The question on some people's minds is, will these Smart Meters soon be connected to 5G, and how can we protect ourselves.

First of all, the answer is a resounding yes, smart meters will certainly utilize 5G.

I recently read [an article from Electric Energy Online](#), that talked all about how 5G will be utilized for utilities. In the book, they write:

"Some of the biggest countries in the world are adopting cellular for smart metering as a result. In addition, the competition among network operators to expand their businesses into IoT opportunities has resulted in a dramatic decrease in the price of cellular connectivity in the last few years. When taking performance into account, cellular solutions can deliver the highest performance and available data rate at the lowest cost – a trend that is expected to extend after the arrival of 5G."

Essentially what this quote, and the rest of the book is saying, is that cellular networks continue to get cheaper and cheaper, and are becoming the simplest way for devices like smart meters and other IoT devices to be connected. This will only become more common, and more certain, as 5G continues to roll out.

So, the next question is, if smart meters will be connected to 5G networks, how do we protect ourselves.

Well, luckily, there are already some things we can do, since the way we protect ourselves from smart meters today won't really change much with the implementation of 5G, other than the fact that it will be even more important.

There are smart meter shields that you can buy, and they do work quite well. That is probably where I would start if you are not able to opt-out of having one, or if you have one already.

Protecting Your Bed From 5G

Sleep is such an important part of recovery, so it's extremely important that we protect our bed and our bedroom from EMF radiation.

However, in this book, I want to talk about a product that is becoming more and more popular, and I think will be in even greater demand as 5G becomes more present in our lives, and that is an EMF protection canopy.

You can probably imagine what this is. Essentially, it is a large canopy that hangs over your entire bed. The canopy is made from a material that is capable of attenuating almost 100% of EMF radiation.

I've had people tell me they've never slept better after purchasing one, and I can understand why. When you're sleeping inside, as long as you didn't foolishly bring your phone, or tablet, or laptop with you, you should be exposed to virtually no EMF radiation whatsoever.

So, regardless of what is inside of your home, or outside, you'll be completely protected when you sleep. This is especially important when we think about protecting our bodies from 5G coming from small cell towers right outside our home.

So, although there are plenty of other ways that you can protect your bedroom from EMF radiation, nothing is likely to be as complete as trying one of these canopies. Be extra sure that you don't bring any EMF emitting devices inside though.

Other Ways To Protect Your Home From 5G

I realize as I'm going that I could easily take up this entire chapter with just ways to protect your house or apartment from 5G, but I want to be able to make this more of a wholistic chapter, without it being 12,000 words.

It's important to remember that 5G, is just radio frequency, a type of EMF radiation. So, the way it damages our bodies is no different than any other EMF radiation, it will just likely be more pervasive, and with a greater power magnitude.

Any part of your life that you are able to reduce your exposure to EMF radiation will ultimately protect you since we know the biological damage is cumulative.

If, as you're reading that guide, you have any questions about how to apply the principles specific to a world with 5G, feel free to contact me and I'll do my very best to help.

3. Get An EMF Meter

No matter what you're doing, if you care about the danger of EMF radiation then the most important tool you can possibly own is an EMF meter.



I wrote about this in my other guide to the dangers of 5G, so I'm going to borrow from that book instead of re-inventing the wheel.

Not only will a quality EMF meter allow you to measure the radiation exposure around you, but it will also tell you if the steps you are taking to protect yourself are actually working.

For example, say that you have a smart meter on your home, and you want to shield yourself. You purchase a quality smart meter shield but aren't sure if it actually reduced the radiation in your home. Having a good EMF meter will tell you.

There are endless ways that you can use an EMF meter to learn about the exposure risks in your home, in your neighborhood, or at work. You can tell not only how much radiation, but what kind you are being exposed to.

A good EMF meter will also be your absolute best friend when it comes to measuring potential 5G implementations in your neighborhood.

The trouble is that most EMF and RF meters on the market are designed to measure the current outputs of RF in the sub 8 GHz range. When it comes to 5G, it is being tested in two ranges primarily.

Below 6 GHz, and between 30-300 GHz.

Currently, there isn't a publicly available meter that can measure in both of these ranges, so we have to go with the best that is available.

Luckily though, all 5G towers are only using the lower range, which is why **I recommend the Trifield TF2, which you can get on Amazon.** At least at the time, I'm writing this, the Trifield can measure all currently installed 5g antennas because they all use the lower range. This may not always be the case. Here is what the Trifield website says about this:

The TF2 RF mode covers up to 6 GHz. All the present 5G deployed in the US is in this frequency range (in fact, it is all below 5 GHz). However, within the next few years, commercial deployment of 5G in the next higher band, a big jump up to 28 GHz, may begin. At present, no RF meter is commercially available that simultaneously detects this high frequency band and the lower frequencies. It is not clear yet whether the 28 GHz band will ever be widely deployed, because there are problems. Chief among the problems is that 28 GHz is very poor at penetrating to the inside of buildings or even through windows. Also it generally has to be line-of-sight.

Best EMF Meter For Measuring 5G

If the price of the product is not at all a factor for you, then this might be a better option than the TF2.

My recommendation for a more premium meter that can detect 5G has to be the Acoustimeter AM 10 that you can get on Amazon. As far as EMF meters that are easily available, this is probably the best RF meter on the market.

It can measure in the frequency ranges of 200 Mhz to 8 GHz, which covers the entire lower range of 5G, which is being widely tested at the moment.

This meter is also really easy to use, and a tool that you want to have with you all the time. It is chosen by many experts in the field and one I use myself when strictly testing for RF radiation exposures such as smart meters.

However, regardless of which EMF meter you choose, just be sure that it can measure RF radiation, and not just magnetic and electric-like some of the less expensive meters.

Remember that EMF radiation includes electric field, magnetic field, and radiofrequency radiation and that when it comes to 5G, we are only concerned about the radiofrequency radiation.



4. Your Cell Phone and 5G

Alright, now let's spend a little bit of time talking specifically about how 5G will increase the danger of your cell-phone, which if you've read this far, might be a bit obvious.

Modern smartphones are one of the largest drivers of the need for a 5G network. Now that most smartphones are really just mini-computers, they require high speeds and large bandwidth to maintain the speeds that we've come to expect.

However, as files get larger, and current frequencies become more crowded, our phones will feel slower and slower.

So, although the new 5G network infrastructure will allow for all kinds of things like IoT, autonomous driving, etc. it is mainly needed to support an ever-growing cellular network.

Your cell-phone will communicate with these small cell towers in different ways than it currently does, constantly reconnecting to the nearest small cell-site. This constantly swapping between connections is believed to force your phone to emit even more radiation.

Not only that, but the packets of data being sent and received will be considerably larger.

So, instead, let's talk about ways we can protect our bodies from the 5G connection of our cellphones.

Here are a few ways that I want to quickly highlight:

1. **Distance** - We already talked about why distance is so important to protect yourself, especially from 5G, so I won't double up by talking about it again here.

2. **Cell Signal** - This one is extremely important with respect to 5G. When your phone has a poor connection, it actually increases its power level to try to find or maintain a connection during a phone call, which results in much higher levels of radiation. Some studies actually estimate that a phone could emit as much as 1000 times more radiation if it is at 1 bar or less. With the influx of 5G, this danger could be significantly greater.
3. **Wait** - Many cell-phones emit a burst of radiation when a call is connected since it takes much more power to establish a call than it does maintain it. So, whether you are making a phone call, or answering one, wait about a second after connecting before you put the phone to your head.
4. **Use Airplane Mode** - One of the most underutilized features of your cellphone is airplane mode. Although this won't eliminate all of the radiation the phone is emitting, it will vastly reduce it by eliminating the cell connection. With 5G coming out, this will be even more important. Your phone emits radiation even when you're not using it because it maintains its connection to the nearest tower. On top of that, apps are updating, emails being downloaded, texts received, etc. All of that data requires radio frequency transmissions, resulting in EMF radiation emissions.
5. **Get an Air Tube Headset** - One of my absolute favorite EMF protection products, air tube headphones work much like normal headphones, except the upper portion emits no magnetic radiation at all. Instead, the speaker is about halfway down the cable, and it sends the sound through a literal tube of air to your ears. This utilizes the distance principle to protect your brain. So, when you're making a phone call on your cell-phone, you can use this instead of holding it up to your head.
6. **Get an EMF Protection Case** - I think with more and more people wanting to be protected from 5G, that these cases will be even more popular. They work just like you'd think, protecting the user from some, if not most, of the radiation emitted from the device.

5. Advocate Against 5G

Finally, the last thing you can do (and it could be the first thing you do) is to advocate against the rollout of 5G. There are already hundreds if not thousands of groups forming in communities all around the world to advocate against the implementation of 5G.

This is mostly because this is a completely untested technology, with largely unknown health impacts, that will be pervasive in our communities. Although it will only be in larger cities, to begin with, it will likely eventually be just about everywhere in most industrialized countries.

If you feel so inclined to try and fight against this, the **Parents for Safe Technology** have put together a fantastic resource outlining a host of ways that you can speak out against 5G.

It includes agency email addresses and phone numbers, as well as education and stock letters to help you.

You can find all the information you need on their [Take Action page](#).

Honestly, fighting against the implementation of 5G is one of the best possible ways to protect yourself, and your family, from the potential harm.

6. Be Careful Where You Live

This one is not simple, and by no means am I saying that you need to move, but this is really important information to know.

Since the infrastructure required to support a 5G network will be so capital intensive, many experts believe that 5G will likely not expand outside of major cities for quite a long time.

We are already seeing 5G implemented in large metropolitan areas in the United States, China, and around the world. However, it is not at all cost-effective for telecom companies to build expensive new 5G towers in more rural areas, or even medium-size cities, since they will likely never get a return on their investment.

Many pundits even believe that the margins for return on investment in larger cities could be slim for a while until they can reach economies of scale with the production and installation of these smaller cell towers, and as new technologies continue to develop to help deliver 5G frequencies.

So, if you live in a smaller city or in a rural area, you are not likely to have 5G or have to worry about the radiation from 5G, for quite a while.

If you do live in a larger city, you could consider this information, and decide whether a change of location is worth it for you and your family.

Why Do We Need Protection From 5G?

If you've read this far, first of all, I commend you, second of all you should probably have at least a pretty good idea of why we likely need to protect ourselves and our families from 5G.

However, if you want to learn much more, there are some great resources out there. First of all, try to look at some trusted resources for information.

One such resource would be the [Environmental Health Trust](#), who is the leading non-profit for advocacy and education on EMF radiation.

5G Protection Devices?

So, I wanted to just talk about this for a second, because I've been asked about this a ton. First of all, I would say that just about any device on the market advertising itself as specifically developed to protect against 5G is almost certainly not to be trusted.

This is primarily because these companies have virtually no way to test their products against these frequencies. Even if they had a machine that simulated them, it would not be anywhere close to what a real-world 5G network will be like.

Perhaps they could set a frequency device to something similar to what 5G will be and put a blocking technology directly between an analyzer and the frequency, but this is not at all what 5G will be like in the real world with the variety of technologies bouncing the signal all around you.

5G Cell Towers - What They Are, How They Work, and Why It Matters.

Alright, first let's just have a conversation about what 5G towers are, how they work, and why they are different than what we see now.

So, your phone currently (almost for sure) is connected to a 4G network, this stands for the 4th generation of cellular networks. **In order for it to be connected to that network, it must be using radiofrequency waves to communicate with a nearby cell tower.**

You've likely seen these cell towers around town, or on the side of a mountain, or maybe disguised as a tree. These towers, now sometimes called macro cell towers, are large structures capable of supporting many devices, on a wide spectrum of frequencies, over a large distance.

However, these towers are not at all capable of supporting the coming 5G network. That is for two reasons primarily, first of all, they are only capable of transmitting on a specific part of the radio spectrum (we'll go in-depth on this topic in the section below). Second, the spectrum required for 5G is not particularly good at traveling large distances or penetrating things like trees and buildings.

Now, you may be asking yourself, "If 5G frequencies are so bad at penetrating buildings, traveling long distances, and aren't supported by current cellular infrastructure, why do we need them?"

Well, we'll get into this later, but the short answer is, 5G is faster, **much faster.**

In fact, 5G networks could be as much, or more than, 100 times faster than your 4G. That has implications not only for your Netflix downloads, but also the future of things like artificial intelligence, autonomous driving, machine learning, and much more.

So, getting back on topic, 5G is not able to utilize any of the current 4G infrastructures that have been developed over the last decade or so. **Instead, these networks will require an entire new armada of what are called "small cell sites."**

What Are 5G Cell Towers (Small Cells)?

You may actually have already seen small cells if you live in a larger city that has started rolling out 5G infrastructure. However, you may not even realize that you saw one. That is because 5G small cells are both extremely small, and inconspicuous.

Usually located on light or electrical poles, the sides of buildings, under manhole covers, or just about anywhere else you could fit a backpack-sized box, 5G small cells will eventually be just about everywhere.

Take a look at the comparison below, showing a typical 4G towers, as well as a 5G small cell attached to a light pole.



A small cell is essentially just a single node in a 5G network. However, they are probably the most crucial piece of the network, because, without a large amount of them, the information would not be able to relay to its ultimate destination.

5G small cell towers require very little power, allowing them to be very small. However, these small cells use high-frequency millimeter waves, which have their own limitations.

Like I mentioned before, 5G frequencies are not very good at traveling far distances, or penetrating objects. So, you need a large number of small cells spread throughout an area in order to efficiently cover all users.

We'll talk about this a little bit later, but as I mentioned in the previous chapter, these small cells are relatively expensive to develop and install. So, having to completely replace 4G LTE infrastructure with 5G towers capable of supporting the new frequencies will be extremely expensive.

This means that you likely won't see that "5G" displayed on your cell-phone for quite a while if you don't live in a larger city, where it's more cost-effective to install this network.

Now that we know a little bit more about what these 5G towers are, let's talk about how they really work.

How 5G Cell Towers (Small Cells) Work

Based on what you've read up to this point about 5G frequencies inability to travel far or penetrate, you may think there is something lacking in the technology of these towers. However, the small cells themselves are actually extremely advanced, and it is only the frequencies that are being used that have the limitations.

In fact, it is only because of these extremely advanced 5G small cells that the network will be able to achieve the enormous speeds it promises.

There are a few technologies that allow 5G towers to work and to pass information along the network of nodes to larger towers.

MIMO

So, as you saw in the video, these small 5G towers will allow for something called massive MIMO (multiple-input multiple-output). **So, basically what this means is that instead of data passing in a straight line directly between a user, and a tower, on a single radio wave; data will instead be passed from a single device (your cellphone) to as many small cell sites as are in range and direct-line.**

This allows the data to pass much faster and more efficiently. However, when MIMO was first theorized, the problem was keeping all of the information being passed in order. So, to allow for MIMO to work, an algorithmic technique known as Beamforming was discovered.

Beamforming

Beamforming basically just means that advanced math is used to constantly calculate the best route for the data arrays to travel between your device and all the 5G towers around you. The algorithm adjusts every few milliseconds to account for your location even as you move around.

Picture this: It's 2016, and you're connected to 4G on your cellphone as you travel down the interstate. You are directly connected to a single cell-towers, whichever (on your network) is closest and has the best connection. As you continue driving, your connection is passed from one cell-tower to the next, every 10-20 miles. That is essentially what is currently happening. Your phone just connects and stays connected, to whichever single tower, gives it the best connection.

However, this system does not at all work for the 5G networks of the future. Instead, your cell-phone will be constantly beaming data in multiple directions, to multiple 5G small cell towers in order for optimal transfer of your data.

In order to keep all of this straight, an advanced algorithm must be used. This technique is known as beamforming.

These small 5G towers do run quite efficiently though, as they are able to adjust their power constantly depending on whether or not they are currently in use. They can also increase or decrease their power capabilities instantly to accommodate the needs of the data arrays.

Alright, now that we have a better understanding of what these small cells (sometimes called 5G towers) are, and how they work, let's dive a bit deeper into the frequencies that 5G will utilize, and why this is important.

5G Tower Frequencies

Alright, I think it's extremely important to understanding how 5G works, and how 5G towers are going to work, to understand the frequencies that they will utilize.

Now, just about all telecommunications now, and likely in the future, utilize something called radio wave frequencies. These frequencies range anywhere between 3 kilohertz (kHz) and 300 gigahertz (GHz).

[Lifewire](#) does a really good job talking about the breakdown of these frequencies, and why it matters for 5G, so I'll let them explain:

Some examples of radio spectrum bands include *extremely low frequency* (ELF), *ultra low frequency* (ULF), *low frequency* (LF), *medium frequency* (MF), *ultra high frequency* (UHF), and *extremely high frequency* (EHF).

One part of the radio spectrum has a high frequency range between 30 GHz and 300 GHz (part of the EHF band), and is often called the *millimeter band* (because its wavelengths range from 1-10 mm). Wavelengths in and around this band are therefore called millimeter waves (mmW). mmWaves are a popular choice for 5G but also has application in areas like radio astronomy, telecommunications, and radar guns.

Another part of the radio spectrum that's being used for 5G, is UHF, which is lower on the spectrum than EHF. The UHF band has a frequency range of 300 MHz to 3 GHz, and is used for everything from TV broadcasting and GPS to Wi-Fi, cordless phones, and Bluetooth.

Frequencies of 1 GHz and above are also called microwave, and frequencies ranging from 1–6 GHz are often said to be part of the "sub-6 GHz" spectrum.

Now that we understand that a bit better, let's talk about why the frequency a 5G tower is utilizing really matters. Remember above, when I said that 5G frequencies are capable of being very fast, but are not great at penetrating buildings or traveling large distances.

Well, for the most part, that is true, and that is because most 5G implementations are going to utilize these high-frequency, short wavelengths.

To summarize it simplistically, the higher the frequency, the faster the speeds, but the shorter the distances the wave can travel, and the worse it is at penetrating things.

The wavelength of the radio wave is inversely proportional to its frequency, which is important when we're thinking about how 5G will work. So, a very low frequency might have a wavelength of thousands of miles, while a very high frequency, like those utilized by 5G, could have a wavelength of just a millimeter (hence the name, millimeter waves).

The longer wavelengths that come with lower frequency ranges are significantly more stable, which is why they are able to travel such far distances. Inversely, the extremely short wavelengths of 5G millimeter waves, are terribly unstable, which is why they can only travel short distances. If you tried to send these millimeter waves to current cell towers, miles away, they would be so distorted by the time they arrived they would be unreadable.

Why Does It Matter What Frequencies 5G Towers Utilize?

It matters because different frequencies have different wavelengths, which allow for different uses. So, there isn't exactly a "single 5G frequency," the truth is that companies will use different parts of the spectrum depending on the specific use.

For example, some cities might use lower bandwidths that are better able to communicate with phones, without losing power or distorting the data.

Whereas another company, that is working in a small city without distance, precipitation, or obstruction issues, might use a much higher frequency, shorter wavelength to maximize speeds.

So, we don't know for sure what spectrums different telecom companies are going to use, but we do have some idea.

These companies have all, at least mentioned, what they are planning on using.

- **T-Mobile:** T-Mobile plans to [use the low-band spectrum of \(600 MHz\) as well as the mid-band spectrum](#).
- **Sprint:** Sprint is trying to set itself apart from the competition by using a multitude of frequencies, so far they've announced [three spectrum bands](#): 800 MHz, 1.9 GHz and 2.5 GHz.
- **Verizon:** Verizon's [5G Ultra Wideband](#) network uses millimeter waves, specifically [28 GHz and 39 GHz](#).
- **AT&T:** [AT&T's deployment strategy](#) is to use millimeter wave spectrum for dense areas and mid and low-spectrum for more rural areas, to allow for further distances.

Next, we're going to walk through exactly how you can actually locate how close 5G is to you, and how you can spot the towers.

5g Towers Near Me - An Evolving Guide To Locating 5g Cell Towers

I'm calling this an evolving guide to locating 5G cell towers for a few reasons:

1. Tools outlining where 5G is being implemented are scarce, and more ones are likely to be introduced in the future.
2. This is something that needs to be current, so I'm going to update it whenever a new or better way to track the specific locations of 5G towers come out.

For now, we're going to walk through the tools and resources we have available in early 2020 to find the 5G towers near you.

Do I Have 5G In My City?

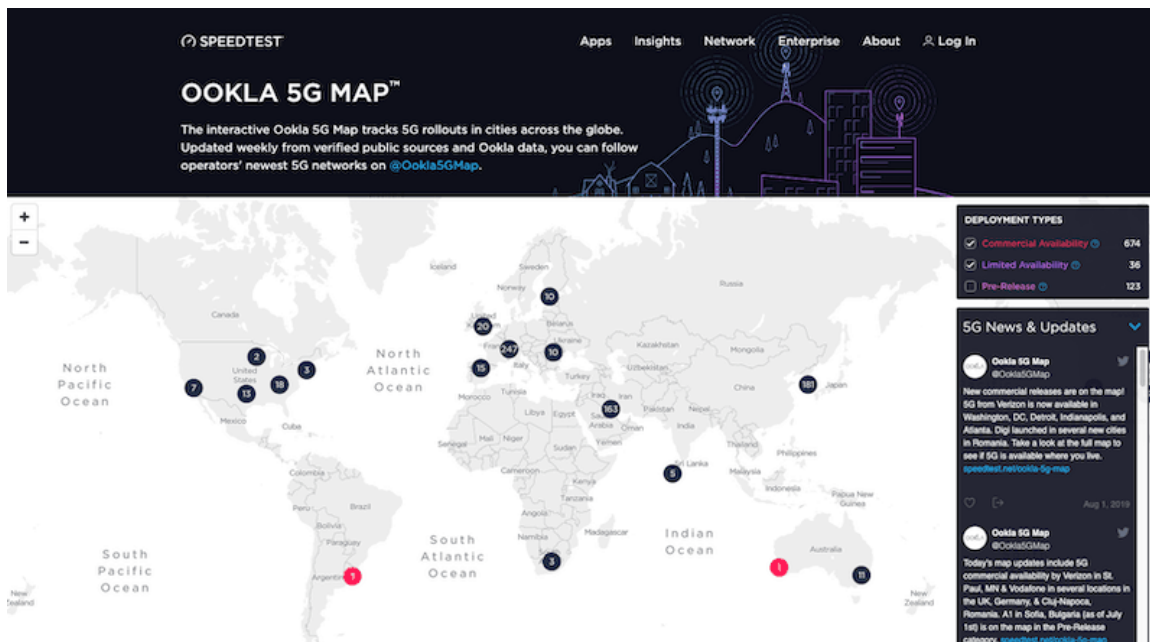
There are a few tools for this.

I want to start by talking about, in my opinion, the best one by far. It's a tool called The 5G Map by the company Ookla.

The link to the website is below, *but before you go*, read on for instructions in how to use it correctly.

You can find it at the following website: <https://www.speedtest.net/ookla-5g-map>

The first screen you'll land on will look like this:



Now, this is a fantastic tool, but I want to explain a few things so that you'll get the most out of it.

First of all, the different "deployment types" that you see in the Key on the right.

- **Commercial Availability** - This means that 5G is currently available, to any consumers of a certain carrier. This is it, this means that 5G is actually live in this area. We'll talk about this more in a second.
- **Limited Availability** - This means that 5G is available, but not to everyone. This often means that it is specific to an industry, a sector, or for testing by a specific carrier.
- **Pre-Release** - This means that the actual 5G cell towers are installed and setup, but it is either being tested in this area, or not yet commercially available.

Now, let's talk a little bit about how to use this tool, and then we'll talk about the next steps to use to know if 5G is actually in your area.

First, you can use the "5G News & Updates" to see the latest information about the commercial release of 5G. For instance, at the time of writing this book, Ookla mentions that 5G is now commercially available in areas of Washington, DC, Detroit, Indianapolis, and Atlanta.

I check this ticker every few days and am absolutely amazed at how fast 5G is rolling out. In previous books talking about 5G, I've mentioned that it is "on its way," or "almost here." Well, now it's here. It might not be everywhere, but make no mistake 5G is absolutely live and commercially available in dozens of cities around the world, and that will soon be hundreds of cities.



GLOBAL 5G STATISTICS	
5G Deployments	833
5G Operators	63

In fact, at the time of writing this in mid 2020, there are already 833 5G deployments worldwide (between commercial, limited, and pre-release) available from 63 different operators or carriers.

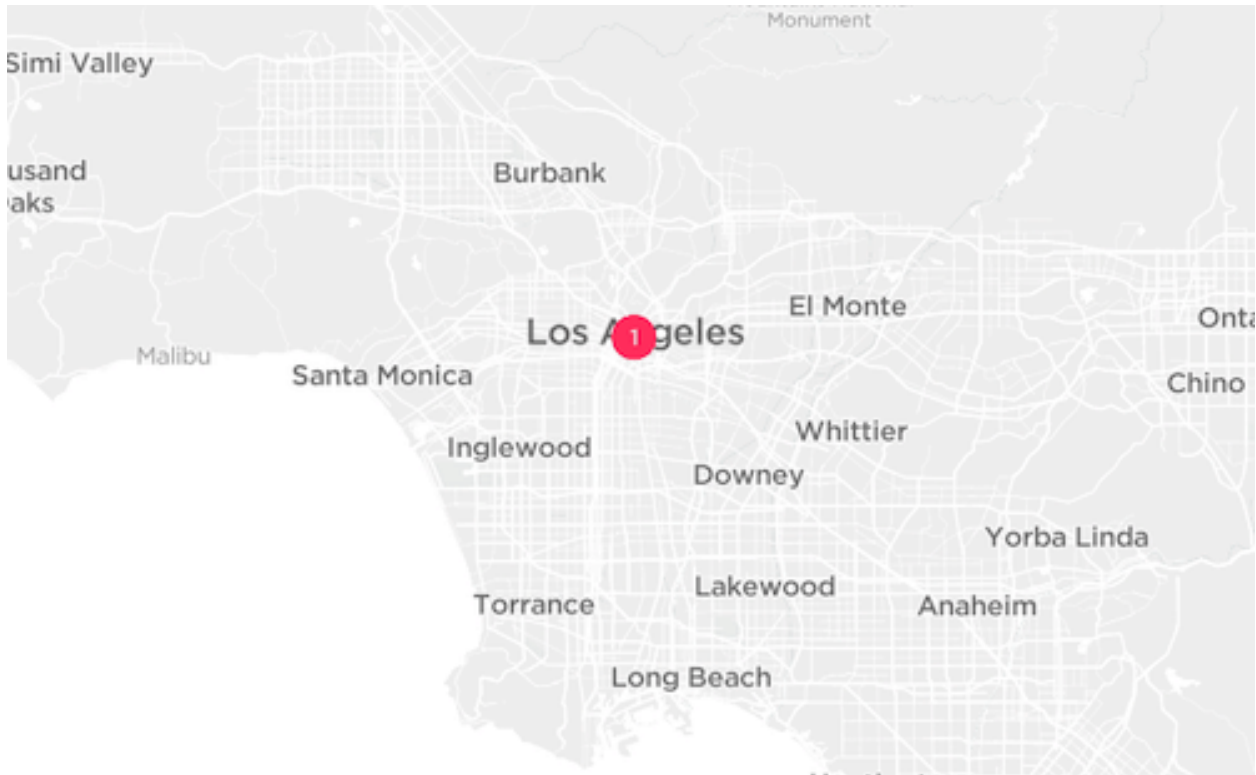
Alright, now let's talk about how to actually locate if 5G is in your city.

In order to illustrate this point consistently throughout the book, I'm going to pretend I live in downtown Los Angeles, near the staples center.

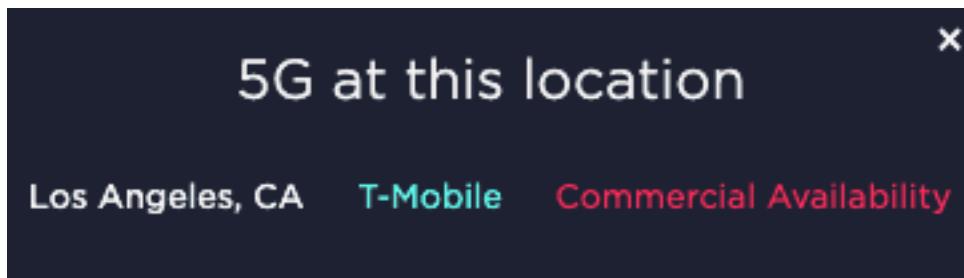
How To Use the Ookla 5G Map To Find 5G Towers Near You

The first thing you need to do is to uncheck all of the "Deployment Types" that I defined above except for the "commercial availability." The other types will show you where 5G is coming, but it won't show you where it is live and active, and that is what we're after in this post.

Next, find where you live on the map, and zoom in closer to your city, either using your mouse wheel or the + and - at the top left of the map. So for me, I would zoom in on Los Angeles, and see this:



Next step, click on the numbered dot (or dots) that you see to review who the carrier is for the 5G network, and what the availability is.



I got this:

There we go, now we know that Los Angeles, California, currently has commercial availability of 5G, provided by T-Mobile (A common US carrier).

As a side note, I'll also mention that AT&T also has "limited availability" of 5G, which means that the hardware is in place, but we're not sure to what extent it is being used yet.

Now that we know there is T-Mobile 5G Available in LA, we need to find out where that coverage actually exists.

It's important to remember that this is not like your current 4G network, where if you have that carrier, you're going to have coverage everywhere. If you read the chapter on 5G cell towers, then you'll know that 5G requires an entirely new infrastructure.

This means that if you have a phone capable of supporting 5G (you probably don't, only the very newest phones do, such as the Samsung Galaxy S10 5G), and you're in a city that has 5G, you may or may not be receiving it.

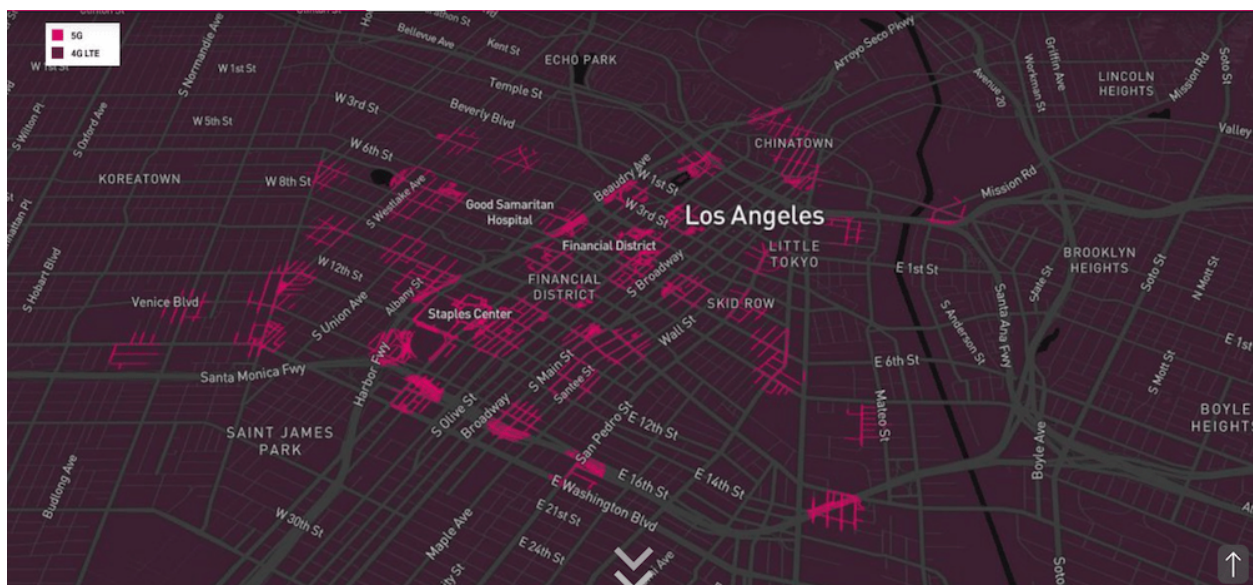
So, what we need to do now is find a coverage map for Los Angeles.

I just literally googled "T-Mobile Los Angeles 5G coverage map"

Which brought me to [this page](#) on the T-Mobile website, which gives some fairly rudimentary coverage maps of the 6 cities where 5G is currently commercially available, including:

- New York
- Los Angeles
- Las Vegas
- Dallas
- Cleveland
- and Atlanta

I selected the Los Angeles map, and got this:



Now, as you can see from the small legend in the top left, 5G coverage areas are highlighted in pink.

There we have it, now we know, down to the block, where 5G cell towers are located in LA. Obviously, there isn't yet a tool showing the exact location of each tower, as they are very small, and can be found every 500 feet or so, but this would give us a clear indication of the areas that have 5G.

This will help you in 1 of 2 ways, but probably not both:

1. If you're excited about 5G, then it will show you where you can get coverage on your new 5G enabled phone.
2. If you're worried about 5G, like me, it will show you the areas to try to avoid.

Now, for this exercise I said to pretend that I live near the Staples Center, as you can see from the map, most of the areas around the Staples Center do have 5G coverage.

Unfortunately, not every carrier has as helpful of a 5G coverage map as T-mobile does.

Here is what is currently available from a few other large cellular carriers:

AT&T 5G Coverage

AT&T does have commercial or limited 5G coverage available in 21 US cities across 12 states. Unfortunately, they don't have individual coverage maps for each city to show you the areas and neighborhoods where coverage is available.

Instead, they just have a map listing the cities and a list of those same cities.



I found that map at their main [5G consumer webpage](#) that just talks about what 5G is, why it's great, and where it's currently available.

In my opinion, AT&T currently provides the least information about where 5G coverage is actually available and certainly doesn't provide any indication of where their 5G cell towers are located.

Sprint 5G Coverage (Locating 5G Cell Tower Areas In Your City)

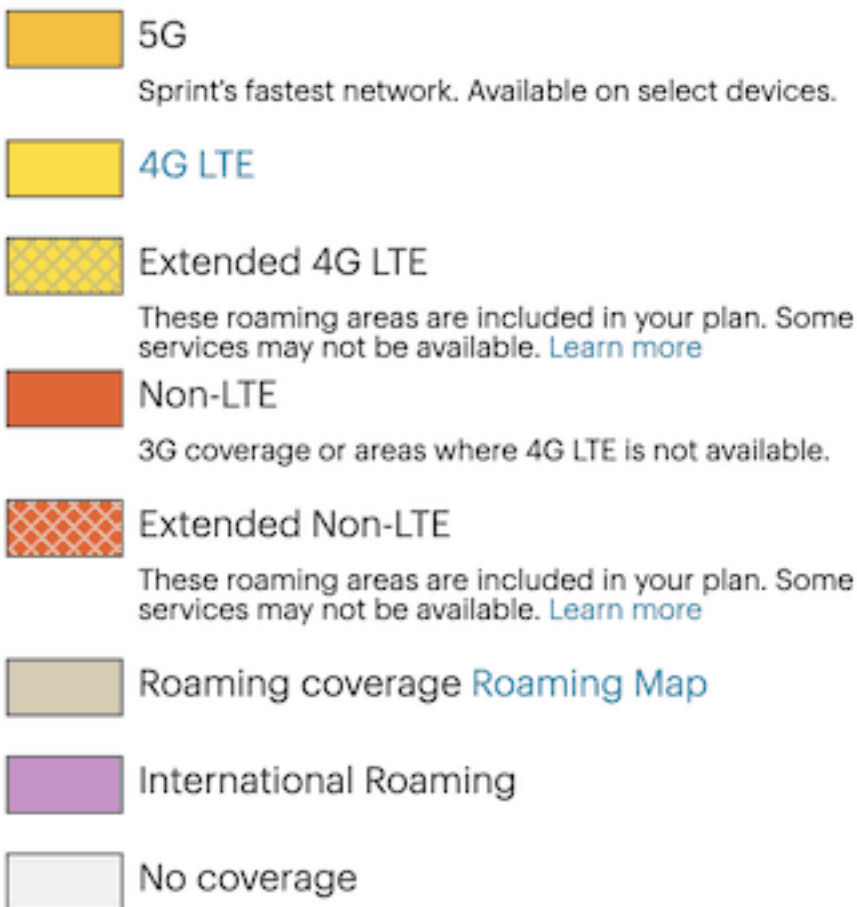
Sprint actually has probably the best resource available to locate their 5G coverage and 5G cell towers, down to the very neighborhood. Also, unlike T-Mobile that we used in the example, Sprint actually has an interactive map that you can use to locate 5G.

It's a little confusing when you first land on it, so I'll give you a little bit of help.

You can find [Sprints 5G coverage map here](#).

When you first land on the map, you'll just see a big yellow/orange map of the United States, this is just showing the 4G LTE coverage, and not really telling you anything else.

Near the top left, you'll see the word "Legend." If you click that, you'll get a more helpful drop down that looks like this:



Learn about data [speeds](#) available by coverage.

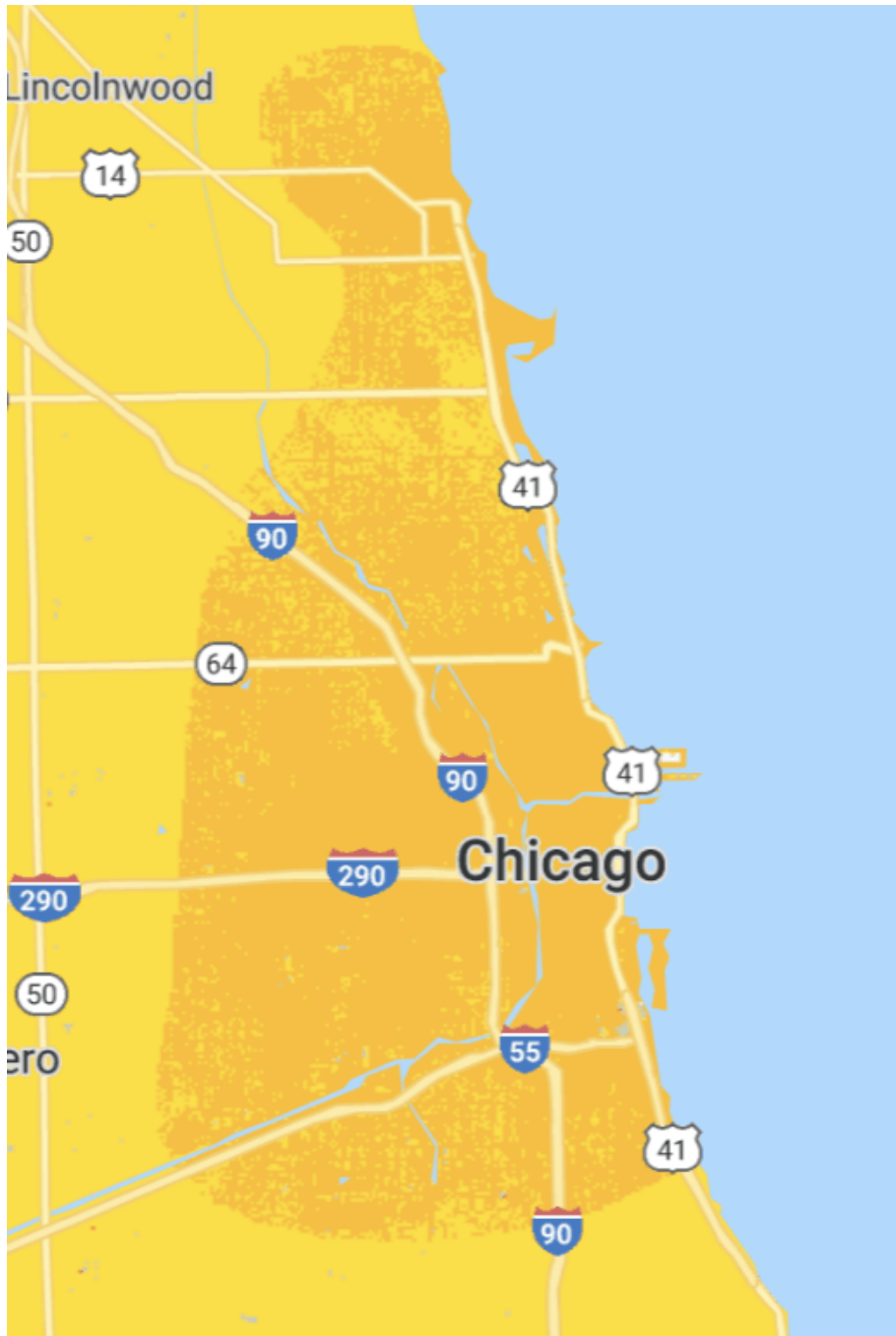
Sprint Direct Connect is available where data coverage exists.

Now, that dropdown will show you the colors for the different types of network coverage in different areas.

Honestly, I really wish they had used another color for 5G, because it's really hard to distinguish between the 5G, 4G LTE, and the Extended 4G LTE areas.

So, now go ahead and zoom in on where you live either using Command and the + button on your keyboard or by using the + in the top left.

For this example, I'm going to zoom in on Chicago, because I know that they have fairly extensive 5G commercial availability in Chicago.



Once you've zoomed in closer to your city, you'll start to actually see that there is a slight difference between the 5G coverage color on the map and the 4G LTE that is just about everywhere.

Once I zoomed in on Chicago, I got this:

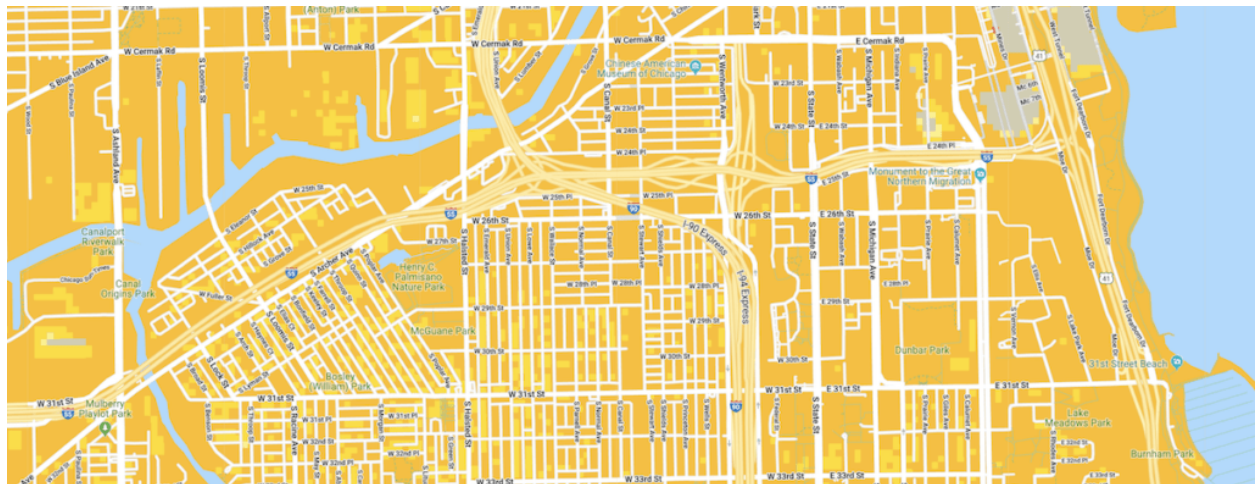
As you can see from the image, there is 5G availability in most of Chicago proper, from the boardwalk to a few miles inland.

Now, it isn't perfect coverage, as there will be some supported areas and some that are not.

So, if you have a 5G enabled phone, and you were driving around downtown Chicago you would probably see that "5G" in the top left corner swap to "4G LTE" and then back again a number of times.

The nice thing about Sprints interactive coverage map is that you can zoom in even closer, and see fairly accurate coverage down to the block.

I zoomed in closer to the Chinese American Museum of Chicago and saw this:



As you can tell from that image, most of that area has 5G coverage (the deeper orange), but there are still pockets where you would only have 4G LTE (the more yellowish orange).

Now, exact 5G coverage depends on which 5G phone you have (I know, confusing) but the Sprint map lets you select your exact phone and it will alter the map to show you that.

The main point is, this map will allow you to see if you have 5G where you live, work, and spend time.

Verizon 5G Coverage

Verizon has one of the best (in my opinion) cellular coverage maps, unfortunately, they haven't added 5G to it, so it's useless for our purposes, but hopefully, that won't always be the case.

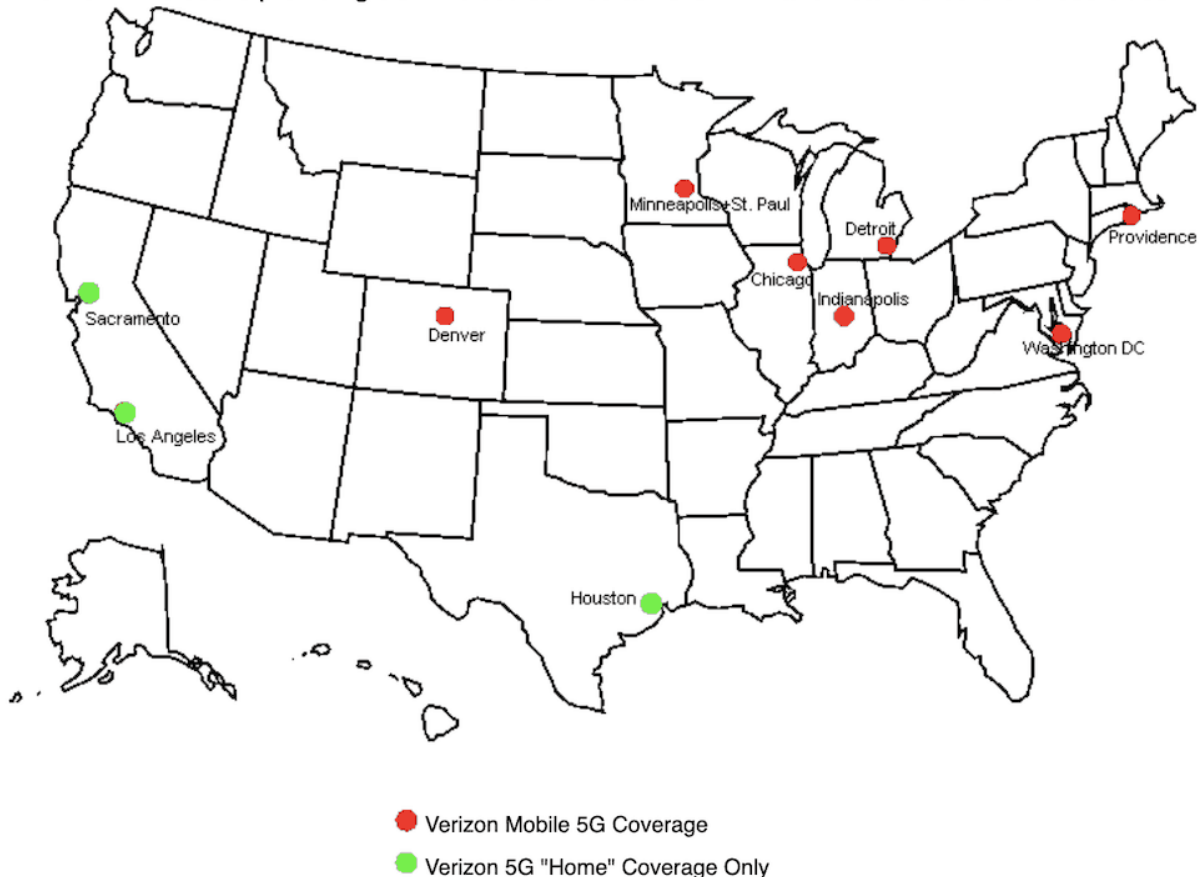
Instead, we just have to rely on a list of cities that we know Verizon has rolled out 5G mobile in.

Side note: Verizon was actually the first carrier to bring 5G to the United States, but it was for home use, called the Verizon 5G Home. It wasn't until April of 2019 that they rolled 5G out for mobile phone users.

So, if you take a look at the map below from [Cellularmaps](#), you'll see the green dots indicating Verizon's 5G home coverage, and the red dots indicating their mobile coverage.

Verizon 5G Coverage:

Verizon Wireless is providing 5G wireless service at 28 GHz in and near the core of these cities:



For now, though, that is about all we have showing where Verizon 5G is available. I'm sure in the near future, they will update their interactive coverage map to also show 5G, and then we'll have much better information about where 5G cell towers are likely located in major cities.

Now that we've talked so thoroughly about how to find out if 5G is in your city, and where exactly it is in your city (depending on your carrier) it's time we talk briefly about how to actually locate 5G small cell towers near you.

How To Locate 5G Cell Towers Near You

This isn't as straight forward as it is with the current towers that support 3G and 4G LTE. With those current towers, you can basically just look at them, and know that they are cell towers.

Usually, they are quite large, quite obvious, and surrounded by a bit of chainlink fencing. If you get up close, you'll find signs warning you about excessive radiofrequency radiation.

Sometimes they'll be disguised as trees or something else, but if you look at them you'll know pretty quick that they aren't a tree.

Now, with 5G towers, you have to really be paying attention, for a few reasons:

1. They don't all look the same. Different carriers are installing different equipment.
2. Since 5G small cell towers are so small, they are extremely easy to disguise or cover, so there may be one there without you really even knowing it.
3. They are deliberately hiding them. [Here is an article](#) showing how Vodafone, an enormous telecom company plans to hide many of their 5G cell towers under manhole covers. You'll also hear about how many telecom companies are hiding their towers on top of buildings, inside of trees, on lamp poles, and many other places that you wouldn't expect.

So, we have to use a few other tools at our disposal.

The first thing we need to do is find a neighborhood that has active 5G. You can do that with the instructions above.

Next, we need to go hunting for 5G towers, equipped with an EMF meter capable of reading at least some of their frequencies.

Currently, most quality EMF meters like the Trifield from Alphalabs, or the Acoustimeter, can actually detect many of the 5G towers that are being implemented. Here is a good description of why from Alphalabs:

“The TF2 RF mode covers up to 6 GHz. All the present 5G deployed in the US is in this frequency range (in fact, it is all below 5 GHz). However, within the next few years, commercial deployment of 5G in the next higher band, a big jump up to 28 GHz, may begin. At present, no RF meter is commercially available that simultaneously detects this high frequency band and the lower frequencies. It is not clear yet whether the 28 GHz band will ever be widely deployed, because there are problems. Chief among the problems is that 28 GHz is very poor at penetrating to the inside of buildings or even through windows. Also it generally has to be line-of-sight.”

So, you can pick your EMF or RF meter, but make sure it can at least detect this full range of lower frequencies.

Now that we have our EMF meter, we need to learn to spot these 5G towers.

I'm going to drop a few photos below so that you at least have some idea what they may look like.



As you can see, even the early 5G cell towers are quite small. Now, if you see something like this, and it's in a neighborhood that is offering 5G service, it is almost certainly a tower. However, using your EMF meter set to radiofrequency, you can simply approach the tower and see if the readings spike.

Unlike a smart meter that sends large packets of data via RF only occasionally, you should receive a steady signal on your EMF meter when you're close to the 5G tower.

Thanks so much for reading through my 5G Megaguide.

If you have any questions or if I can help you in any way, feel free to contact me via my website:

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