# Low EMF Computing Solutions By: Jeromy Johnson

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#### **About The Author**

Jeromy is an engineer, author and safe technology consultant. He holds an advanced degree in Civil Engineering and worked in Silicon Valley's financial industry for over 15 years. In 2011, he became electrically sensitive and had to solve this issue for himself. Since then he has helped over 3,000 families create low-EMF homes. Jeromy has a solutions-focused website, an educational book called "How to Find a Healthy Home" and his TEDx talk "Wireless Wake-up Call" has been viewed 1.7 million times.

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#### INTRODUCTION

One of the most common questions I receive from people who have become electrically sensitive is "How can I use a computer without increasing my symptoms?"

Some people experience headaches, brain fog, rashes, burning skin, heart arrhythmia or other **electrical sensitivity symptoms** when using a computer. Whether you already experience symptoms or simply want to use a computer in a healthier way, there are a number of practical things you can do to lower your EMF exposure.

Computing has been a struggle for me since becoming electrically sensitive over a decade ago. I can have periods of high sensitivity that last for for weeks. During these times, being on a computer just 30 minutes a day can be a challenge.

However, through this process I have learned a lot about what works, and what does not when it comes to using a computer safely. I have become much more resilient because of this and now have long periods of time with no symptoms at all. My hope is that you can implement some of the following solutions to get back online or to simply prevent you and your family from experiencing the negative effects of EMFs.

## TOP NINE LOW-EMF COMPUTION SOLUTIONS

- 1.) Utilize the basic steps for safe computing. These are steps that you can use even if you are not electrically sensitive. Read this article to learn a few quick modifications to your computer setup.
- **2.) Heightened EMF sensitivity may come and go.** As I mention above, I have had times when I could not tolerate using a computer. These times can be very discouraging. However, after some time, my symptoms would lessen and I could get back on the same machine that previously gave me intense headaches and/or heart palpitations. Overexposure

will lead to downtime.

Learn to pace yourself. You may be able to do 20 minutes per day and then work up to a couple hours or more per day. I can now be on my laptops 5-6 hours per day. When you start to get a tension headache or that buzzing feeling in the head, back away and take a break for an hour or so. Taking a shower, running cold water on your hands and face or going for a walk in nature will help reduce the symptoms.



#### **USE LESS POWERFUL DEVICES**

**3.) Try an electronic keyboard.** During times when your symptoms are intense, there are still ways to be productive. I typed this article on my AlphaSmart 3000. It is a battery powered electronic keyboard (with almost no EMFs!) that will allow you to type up to 100 pages that you can easily import into a computer.

It's amazing how productive and creative you can be without the distraction of the internet right in front of you! Many writers use these for their first drafts. Most of the material on this website was written on my AlphaSmart 3000 (pictured below). I recommend that you purchase the AlphaSmart Neo or Neo 2, which are newer models than the 3000 that I have. You can find a high quality **model on ebay** for about \$50. It is one of my favorite low EMF computing purchases and it will last you for years.



## **USE LESS POWERFUL DEVICES**



**4.)** Use your smart phone for communicating. This may sound antithetical to some, but hear me out. I have multiple EHS friends who have figured out that the least painful way for them to be connected to the world is through their smart phone. With the phone on Airplane mode, it is actually a very low EMF computer. You can type responses to your messages and then press "send" while the phone is on Airplane mode. The messages will be stored in the phone. Then, put the phone down on a table, turn off Airplane mode and walk away from the phone. Within 30 seconds, the phone will have sent all stored messages and downloaded any new messages.

Low EMF Computing using Smart PhoneOther than a couple seconds of exposure after turning off Airplane mode (you could also have your spouse or a friend do this), this method is nearly EMF free



and is a good option for those who need to stay connected for work or family reasons. The phone need not be off of Airplane mode more than 5 minutes a day, depending on how many times you need to check and send messages.

Note that this method works for text messages, WhatsApp and most web based email like Gmail or Yahoo. It does not work for certain apps like Facebook Messenger or Google Hangout. This method works incredibly well for those who are too sensitized to EMFs to safely be on a

computer. See #9 below for another tip on using a phone.

## **HOW TO FIND A LOW EMF LAPTOP**

**5.) Not all computers are created equal.** The severity of your symptoms may depend upon which computer you are using. I find that older systems with less processing power are easier to use without electrical sensitivity symptoms. There is something about the newer, more powerful computer processors and screens that give me a headache and chest pain very quickly.

I have purposely tested many computers the past few years to see what works and what does not. The following is what I have found to work for me. *Please note:* We are all different and an electronic device that works for me may not work for you. However, in speaking to others who have experimented with various computer models and brands, the following is generally true for many people who are electrically sensitive. If you use other models successfully, please share the model below in the comments.

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## MY RECOMMENDED LOW-EMF LAPTOPS

Toshiba Satellite Laptop (Purchased 2015 & 2018 – exact model number is C55-B5298 with a Celeron processor). This computer has minimal computing power, but works great for my writing and basic internet use (pictured at right). You will have to shop around to find an available unit to purchase (they sometimes come up on ebay, Walmart or Amazon). You will search for "Toshiba Satellite C55-B5298 15.6" Celeron N2830 2.16Ghz 4GB 500GB Win10".

**Dell Latitude E6230** (Purchased this computer in 2016, 2018 & 2019 with **this model**). This small laptop computer has excellent computing power/speed, but is also very quiet and gives me minimal symptoms if I use it for only 2-3 hours at a time. It's my primary laptop for Zoom calls and internet use. You will have to shop around to find an excellent condition model for purchase. They are typically available **here on ebay**, Walmart and **Amazon**. You can do an internet search for "Dell Latitude E6230 12.5" 8GB RAM SSD i5-3320M 2.6GHz Webcam".

**Toshiba Chromebook 2** (Recommendation from client 2023) This is a very quiet, low-EMF machine that works well for electrically sensitive people that don't mind using a Chromebook (not Windows or Mac). This specific model was manufactured in 2016. You will search using these details: "Toshiba CB35-B3340 Chromebook 2 Part Number PLM02U – 009008". Here is one currently on **Amazon**.

Dell Latitude E6330 (Recommendation from a client in 2022) - This

Dell laptop is very similar to the E6230 that I have been using successfully for the past 10 years. This one appears to be easier to find used at this time on **Amazon** and **ebay** and is working well for several clients of mine. If you try this model, please leave a comment below to let us know your experience. Search for "Dell Latitude E6330 13" Laptop Intel Core i5-3320M 2.6GHz 8GB 320GB Windows 10 Webcam".

Acer Aspire V5 11.6" Laptop (Purchased multiple units in 2019). Small, lightweight, good speed. This laptop works very well for me. It's an easy laptop to take to cafes to do some writing. I have the 4GB Ram model and moved it to Windows 10 for better performance. You can find this version on ebay here. Search for "Acer Aspire V5-131 11.6" Laptop".

**Lenovo Chromebook (2022)** – Over the past year I have purchased and tested several Acer Chromebooks (2013 and 2015 models). These simple machines are great for electrically sensitive people. However, due to their age, they are no longer updated. Several of my clients have instead purchased this Lenovo Chromebook, which you can purchase new **on Amazon**. If you don't mind the limitations of a Chromebook (no MS Office applications and you must use the Google systems), these can be excellent, simple computers that cover most of your internet needs.

Many desktop computers (or laptops connected to a docking station) with separate monitors can also work well (Older Dell monitors worked best for me). You can also use a **screen magnifier** so that you can sit farther back from the monitors. This **simple magnifier** can work too. Desktop systems provide the ability to modify your work station in a way that lowers your EMF exposure (like moving the computer and screen farther away from your body). Several of my clients have done well with the **Dell OptiPlex Desktop**. Search for "Intel Core i5 – 8GB Memory – 500GB Hard Drive."



#### **HOW TO FIND LOW EMF LAPTOP COMPUTERS**

For any used/renewed laptop purchases of the above models on Amazon or Ebay, just make sure you can return them within 14 or 30 days if it doesn't work for you or if the machine is not working properly. I often buy a few models at a time and keep the one that works best for me. I typically take these older machines to a local computer repair person who keeps them running smoothly and updates any hardware/software that is necessary. Some laptops will last 10-15 years if you treat them well and a solid relationship with a good computer repair technician in your community will help you to have a low-EMF computer system for years to come.

As I always use my laptop on battery power, it is recommended that you buy a new battery whenever you purchase a used laptop. This will give you 3-4 hours of use before having to charge your laptop. As you can see in the picture below, I often have multiple laptops of the same make and extra batteries, which will allow me to keep working without having to wait to charge the laptop.

For the Dell Latitude E6230, I call up Dell directly and order a long-life OEM battery that is made for the laptop. These batteries seem last longer and are more durable than off-label batteries. The battery for this laptop is the 58 or 65 Watt Hour VMware 6 Core Processor, 3YRW.

The part numbers are Y61CV and FN3PT for these long-life Dell batteries. I have paid anywhere from \$25 to \$140 for the batteries directly from Dell. If Dell no longer carries a battery for your laptop model, you can find a replacement battery through **Laptop Battery Express**.

## LAPTOPS AND BRANDS THAT ARE TYPICALLY HIGH EMF

The following are computers that I have reacted to very quickly (usually headaches and pressure in the chest within 20 minutes to an hour of use). I returned these computers within their 14 day to 30 day return window and moved on.

- MacBook Air Laptop (Purchased and returned 2012)
- MacBook Laptop (Used 2013)
- iMac Desktop (Used 2014)
- Dell Inspirion 15 (Purchased and returned in 2014)
- Dell Inspirion 15 3000 Series (Purchased and returned 2015)
- HP Pavillion Laptop (Purchased 2013)

As a general rule, older corporate Dell laptops and new Toshiba laptops (now called Dynabook) seem to work well for electrically sensitive people. Anything from Apple, along with HP's and the newer Dell laptops tend to be high EMF machines. I have heard from many EHS people that Apple computers are the worst for them (partly due to their aluminum case – see this video). It's a shame because I really like Apple computer systems.

## ADDITIONAL IDEAS TO MAKE YOUR COMPUTING HEALTHIER

**6.) Rotate Your Computers.** If you happen to have a couple different computers (possibly one old computer and one new), it helps to limit the amount of time you spend on any one of them. I find that if I start reacting to one computer, it is best to not use it for a day or two. I usually cycle between 2-3 different laptops listed above and pictured below. Every computer emits its own set of frequencies. Changing things often prevents your body from becoming sensitized to any one computer.



## ADDITIONAL IDEAS TO MAKE YOUR COMPUTING HEALTHIER

7.) Work in a low-EMF environment. You could have an ultra-low EMF computer, but if you are in a high EMF environment you may quickly develop symptoms. Here is a summary of how to measure and reduce the four types of EMFs in your home and/or work space. Here is short video that show you how to measure your home. Finally, the following image shows the EMF measurements at my current laptop workstation. The RF, magnetic and electric field components are all very low. You can learn more about these meters and how to use them on my EMF meter page.





## **HOW TO FIND A LOW EMF KEYBOARD AND MOUSE**

- **8.)** Use a Low-EMF wired keyboard. Not every wired keyboard (or mouse) is low-EMF. Some will have cheap circuitry that will produce significant amounts of EMI (electromagnetic interference). This can be a problem for electrically sensitive individuals. I test my equipment with a Radio Shack AM radio model 12-467 (you can typically find one on ebay) or the TECSUN shortwave radio on Amazon. Here is a **short video** where I demonstrate how you can test your keyboard. This wired keyboard has been tested to be low-EMI. I currently use this basic wired Microsoft keyboard and mouse.
- **9.) Wire Your Smart Phone.** An electrically sensitive colleague recently shared how she uses her smart phone for emails. This helps when she is going through a time of heightened sensitivity. Below you can see her Samsung S3 that is connected to an external keyboard and mouse. The mouse cursor actually shows up and the smartphone then acts like a small computer screen. This is often better than a normal computer screen for ES people. She is able to compose her emails and do her writing on Airplane Mode.



The messages then send once the phone is reconnected to the 3G/4G network (she steps away from the phone then). The USB attachment seen below can be found here. As outlined in this article, it is also possible to connect most smart phones to the internet via Ethernet, which makes it possible to use your device without any wireless connectivity. This is truly a low-EMF computing solution.



#### CONCLUSION

Hopefully these suggestions will get you back in action and keep you healthy for years to come. If you know someone who cannot be on the computer to read this article (very common for EHS people), please print it and mail it to them.

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Disclosure: EMF Analysis is partly supported by a small commission for purchases made through product links on this page. This income enables me to continue to research and write about this important topic. Thank you for supporting my work.

## **SLT TOP SELLING SLT EMF METERS KITS**









The RM6 Basic Home Search EMF Meter Package contains the Safe and Sound Classic III, AlphaLab TF2 EMF Meter, Retekess AM FM Shortwave Radio and Pro Meter Case. Designed for basic monitoring of your personal EMF and RF exposure.







The RM10 Intermediate EMF Meter Package contains the Safe and Sound Classic III, Gigahertz Solutions ME3830B, AlphaLab Line EMI Meter, Retekess AM FM Shortwave Radio and Pro Meter Case. Designed for basic monitoring of your personal EMF and RF exposure.







The RM16 Intermediate EMF Meter Package contains the Safe and Sound Pro II, Gigahertz Solutions ME3851A, Line EMI Meter, Retekess AM FM Shortwave Radio and Pro Meter Case. Designed for more advanced monitoring of your personal EMF exposure and RF exposure.



## RM20 Advanced EMF Meter Package

The RM20 Advanced EMF Meter Package contains the Safe and Sound Pro II, Gigahertz Solutions ME3830B, Alpha Lab UHS2 3-Axis Gauss Meter, AlphaLab Line EMI Meter, Retekess AM FM Shortwave Radio and Pro Meter Case. Designed for more advanced monitoring of your personal EMF and RF exposure.

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