

Erchonia RF Raider™ -- “The Basic Technology”

Authored by: Kevin Tucek, Chief R&D Engineer

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Here is a basic synopsis of how our technology works to reduce cell phone radiation with respect to SAR .Below is a basic statement about energy from Wikipedia.

“Any form of energy can be [transformed](#) into another form, but the total energy always remains the same. This principle, the [conservation of energy](#), was first postulated in the early 19th century, and applies to any [isolated system](#). According to [Noether's theorem](#), the conservation of energy is a consequence of the fact that the laws of physics do not change over time.^[2]”

The basic idea behind the RF Raider is to take the microwave radiation (energy) emitted from the transmitter of a cell phone and convert (transform) a part of it into photonic (light) energy. But in order to do this we had to first overcome a few things.

The first hurdle to overcome is to find a way to capture the energy that cell phone use to communicate. As you know cell phones communicate via microwave signals. The reason microwave radiation is used is because of its ability to penetrate standard structures we are in every day. That is also part of the problem. Because this radiation can penetrate structure; it also penetrates us. We had to find a small antenna that was capable of capturing this energy as efficiently as possible. We purchased and experimented with what was available and settled upon a ceramic antenna for our first production version. However it had many limitations. First it could not capture all the know frequencies the cell phone use in all countries. As low as 450 MHz all the way up to 2.1 GHz. All ceramic antennas are tuned for no more than 2 to 4 frequencies at best. They are also expensive. However these antennas are relatively large and non flexible. Flexibility is important. Because of the new shapes and sizes of cell phones the device needs to be flexible. In order to maximize the RF Raiders effectiveness it needs to be as close to the antenna as possible. In many cases the antenna is on the top or bottom of the phone, without flexibility we could not mount the Raider close to the antenna. Because of these problems we had to invent a new antenna; there was nothing commercially available that could give us what we needed. This new antenna is one of our new patents. This new antenna has some unique qualities. We have tuned it to capture every known Cell Phone wavelength as well as the proposed new bands. . Yet it still allows some of the Cell Phone radiation to escape so the cell phone will still work. If the RF Raider was too efficient the Cell Phone would not work.

The next step in the process of how the RF Raider works is to use this new antenna to capture the radiation (microwave) and convert it to direct current electricity. For this we use microscopic components that are attached to the antenna. We use other components to store this newly transformed energy.

The final step is to convert the newly transformed electricity to photonic energy via the LED.

The RF Raider works because we take advantage of the laws of the “conservation of energy”. By changing the type of energy “microwave to light” (bad to good) we reduce the amount of bad (microwave) energy that remains. There are devices out there that claim to shield the user for cell phone radiation but these do not address the nature of energy. If you simply shield or cover the antenna all you are doing is redirecting (reflecting) the energy. For example the makers of X-ray machines protect the operator by the use a dense material to reflect or redirect the X-ray. In the case of X-ray a

lead shield is used. The energy is never absorbed. The problem with shielding is for it to properly work the whole antenna would have to be covered up. If that were the case the cell phone would not work. The energy is still there at the same strength it is just redirected to in the case of a cell phone to your hand or another part of your head. Some also claim there device can absorb the energy. Any absorbing medium would have to drain the energy in order to continue to absorb. Imaging cleaning large water spill on a table with a small sponge. The sponge would quickly become saturated. Once it becomes saturated it will no longer absorb the water. The sponge would need to be drained of the stored water into a drain or bucket. Before the sponge can be returned to the spill and absorb more water again. Our device uses the LED to drain the temporarily stored energy so the RF Rainer can collect more energy. This cycle continues as long as the cell phone is transmitting.