RxDNA-Residential Dissipative Noise Attenuation

--- Reduces noise in the Home produced by Cell phones, computers, motors, light dimmers…
--- A unique system that reduces noise by turning it into heat.
--- Plugs into a standard AC outlet, draws the noise on that AC line into itself , then dissipates it.
--- Once the noise power has been turned into heat, it cannot get back to its electrical state. It is gone forever.

RxDNA 1000
Product Descriptions

The MxDNA products are designed for the 50/60 Hz. power lines. They accomplish the reduction of high frequency noise. The frequency range over which these products are effective is approximately 5 kHz to 500 kHz.

Noise Sources

Noise in this frequency range can come from a wide variety of sources. They include the following.

Noise from switch mode power supplies that power various electronics that are connected to the A.C. line, including computers, off-the-grid power inverters, office machines, uninterruptible power supplies (UPS), entertainment electronics, etc.
Harmonics from traditional power supplies (not switch mode supplies) that power various electronics, noted above.
Harmonics from electrical motors.

Noise from Cell Phones.
Broadband noise from electric arc welders. This is severe, intense noise.
Broadband noise from induction heaters. This is severe, intense noise.
Broadband noise and harmonics from motor speed controls, light dimmers and solid state switches. The latter includes SCR's and Triacs.
Noise from Radio Frequency (RF) transmitters, Cell Phones and Cell Towers

Filter Products

"Power conditioning" is the broad umbrella of a wide variety of techniques, circuits and systems that filter, smooth, regulate, limit, compensate and adjust AC and DC power to accomplish optimum system performance.

In the arena of removing noise, most such conditioning products filter noise. This means that they stop or arrest the noise. It is somewhat akin to damming a river. The problem with the filter approach (and the dam for that matter) is that the pressure is always there. There is something that is always trying to get through. There are various things that can change that will alter the effectiveness of the filter, most notably the load impedance. Simply turning loads off or on, by definition, changes the load impedance, so the effectiveness of a filter typically varies.

Care must be taken in the design and use of filters since they frequently have high-Q circuits. This allows them to have sharp pass bands or stop bands, but has the decided disadvantage that high-Q circuits typically develop very high internal voltages. These internal voltages are Q-times the applied voltage. So a filter with a Q of 10 (not a particularly high Q) that is powered from 120 VAC, will have (10 x 120) 1200 volts AC internal to the filter. Now, moisture, dust and other debris become a problem since they can cause arcing in the filter. In addition to precipitating component breakdown, and causing a fire hazard, electrical arcs are perhaps the most powerful generator of broadband noise that mankind has ever invented.

Filters require that they carry the power that they are filtering. So all of the power that needs to be filtered passes through the filter. If a filter is added to a major utility power feed after the fact, it will require quite a bit of effort to reroute the power through the filter.

RxDNA Approach To Conditioning Power – Removing Noise

The RxDNA (Residential Dissipative Noise Attenuation) products are fundamentally different from a filter type of product. The basic architecture of the RxDNA is to provide a low impedance path for the high frequency noise. The RxDNA provides a "path of least resistance" for the noise. Once the RxDNA has "captured" the noise power, it dissipates it. "Dissipate" means turning the noise power into heat. This heat is radiated from the product. It is important to note that once the noise power has been turned into heat, it cannot "get back" to "electrical noise". It is gone forever!

Another important and fundamental difference in the RxDNA product architecture, is that it does not "carry" the power that it is conditioning. The RxDNA operates in parallel with the loads (equipment) that it is protecting from noise. The RxDNA simply plugs into a standard AC outlet and draws the noise on that AC line into itself – then dissipates it. This makes it especially easy and convenient to install the unit in a particular application. It also makes it very easy to test the effectiveness of the RxDNA in a particular setting.

Another important aspect of this architecture of the RxDNA is that it can be deployed in a modular fashion. If a single RxDNA does not provide sufficient reduction of noise power, more units can be plugged into the same circuit. Finally, the intent of the RxDNA approach is to capture and remove utility noise power as early as possible. Capture it while it is on the AC line. Capture and dissipate it before it enters into the home.