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THE ROLE OF AULTERRA IN EMI SUPPRESSION

Aulterra components were recently tested in a testing facility specifically designed to measure radio frequency (RF) emissions classed as Electromagnetic Interference (EMI) across a wide spectrum of frequencies from 100 Hertz (Hz) to 10 Gigahertz (Ghz). The Aulterra components clearly demonstrated the ability to affect the strength of the EMI that was present. This facility is owned and operated by Sun Microsystems in Menlo Park, California. This state-of-the-art facility is qualified to certify that equipment meets FCC EMI emission standards. The equipment in the facility is capable of measuring RF emissions with such precision that any equipment which is tested and passes the tests can meet the EMI standards of any country in the world even though that equipment may have to be retested in another facility in some countries due to regulations in those countries.

The Aulterra components demonstrated the ability to affect the strength of EMI in two computer systems. In one system the components reduced the strength of the unwanted emissions by up to 15 decibels (dB) which is a significant amount and difficult to achieve with any current technology used to limit EMI. In the second system the components actually increased the strength of the EMI and were deemed not usable to solve that particular problem. It is anticipated that a modified Aulterra formula will also be effective in this second system. Work on this modification of the Aulterra formula is currently underway, and Aulterra has been invited back to test the modified formula when it becomes available. This second test is expected to occur sometime in the next month.

The market for any components that can effectively and reliably reduce EMI to sufficiently low levels to pass tests in most, if not all, countries in the world is very large. Since all electronic devices must meet the emission standards in all of the countries where they are sold, this is a large global market spanning a range of consumer, industrial and medical products. The electronic components that are used to create these products are constantly growing more complex and running at faster speeds. This is necessary in order to be able to provide the increased capabilities and features demanded by the buyers of each type of equipment. The faster that any device runs, the more EMI it generates, thus making it increasingly difficult to manage the emissions produced and keep them within the regulatory limits established by government agencies around the world.

Electronic devices are also becoming increasingly dense as the demand for smaller and more compact computing and networking equipment is rising. The smaller sizes of the equipment reduce the options for controlling EMI because there is less and less space in which to place electronic components as well as the components to control EMI. The technology of components that is currently used to control EMI has changed very little, but the technology and speed of the components used to build the devices has increased radically and continues to do so. In addition, the increased density of equipment results in increased power consumption and in increased production of waste heat. In order to keep equipment cool, openings must exist through which air can enter and exit. Unfortunately, openings for allowing the flow of cooling air also can allow EMI to escape. This trade-off seriously limits the choices of device packaging and also limits what designers may do when devices of any kind are built.

What is clearly required in the electronic components marketplace is a set of EMI-reducing components that have the ability to control the EMI produced by the high speed, high density devices being engineered today. Aulterra has the technology to create these EMI-reducing components. The new generation of Aulterra EMI-reducing components will give device designers the ability to control EMI, use a wider choice of packaging and maintain the airflow essential to proper operation.

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