



- Introducing TDMG's newsletter by Bruno Zoccali, President TDMG Inc

- Join our [contest](#) and win a Sony Video MP3 player

- Please ask us your [questions](#) and give us some newsletter [ideas](#)

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Introducing TDMG's Newsletter by Bruno Zoccali, President TDMG Inc



TDMG has been in business for over 10 years. When we first started out, I had spent about 12 years in industry with the likes of Pratt & Whitney Canada and Rolls Royce Canada. I had gathered much technical experience at all levels from design to management, but running a business and performing the sales and marketing aspects needed to succeed were not things that I was necessarily exposed to back then. The learning curve

was steep and a few key things became clear very quickly. Our customers want to know that we have the knowledge and the competence to solve their problems quickly and efficiently. Over time we have performed many projects in many industry sectors with great success as witnessed by a high-level of repeat business from those customers.

Today we are introducing our newsletter, which we will issue on a bi-monthly basis in order to share some of the knowledge we have acquired over a 10 year span. The newsletter will cover topics of a technical nature and also some business subjects that we feel could be of

interest to our customers.

We will try to make this newsletter an effective means of communication between the reader and ourselves. In order to do this, we encourage you to ask [questions](#) and provide [ideas](#) about things you would like to see in our newsletter. It will be our pleasure to write about your topics of interest as quickly as possible. Of course, you could always contact us directly if you need more detailed information.

Finally, we also urge you to enter our [contest](#) and a chance to win a Sony MP3 player.

A Little Bit About TDMG

TDMG is an engineering services provider with key expertise in product development and engineering analysis. We have performed projects in various industrial sectors including telecommunications, medical, aerospace & defense, and consumer markets. We have key specialization in design and cooling of electronic equipment, where we

have performed countless projects. We perform CFD (fluid flow), thermal, and stress & vibration analyses as part of our design process to minimize the technical risks as much as possible before going to prototyping stages. We also have a flow and thermal lab which allows us to do validation testing prior to finalizing our design concepts. Over the last

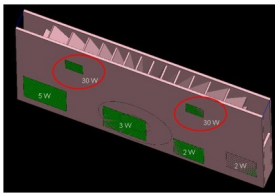
years we have developed the marked capability to perform building ventilation analysis covering such applications as data center cooling, clean room design, indoor swimming pool design, ect. We urge you to visit our website for more information at www.tdmginc.com.

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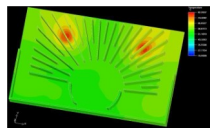
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VGA Fansink

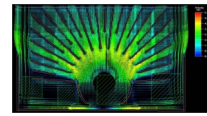
Electronics Cooling of VGA Fansink



Electronics cooling has been an area of specialization for TDMG for the past 10 years. The power dissipated by electronic equipment has continuously increased making thermal considerations ever more important in an industry where time to market is critical and getting the design right first time imperative. This example shows the analysis results for a VGA fansink. The VGA card had 6 components, two of which dissipated 30 W each.



The design of the fansink had to consider height restrictions and had to maintain the 30 W components below a case temperature of 100 C at an ambient temperature of 20 C. The design of the fansink included a low-profile, high performance and long-life fan. The fin layout was optimized to maximize airflow and heat transfer coefficients at the hottest areas. The optimization of the fansink was done with CFD (flow and thermal) analysis tools in



order to better understand the influence of each of the parameters.

We have performed countless electronics cooling analyses from large telecommunication systems to sealed enclosures. If you have any questions regarding our capabilities, please visit our [website](#).



“Data center airflow analysis can be done efficiently... and allows us to quickly identify strategies to fix poor airflow areas...saving significant capital funds for the operators

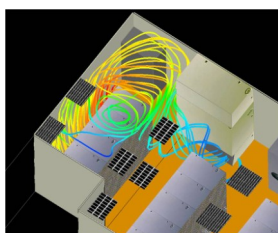
Data Center Cooling

Data center cooling is fast becoming a major problem for service providers and operators throughout the world. The heat dissipation capacity of servers is growing rapidly and the existing and new data center infrastructure must cope with these increased heat rejection rates. Since we perform thermal analysis at the server level, we have significant exposure to the issues which arise from improper room cooling and airflow practices. Data center airflow analysis can be done efficiently using similar analysis tools as those used to analyze electronic equipment. The CFD tools we use allow us to obtain an accurate pic-

ture of the airflows and temperature distribution throughout the whole data center. From this information, it is simple to identify the areas of concern, generally areas where the airflow is poor or exhibiting recirculation. Generally, these areas also exhibit higher air temperatures which have an impact on server performance. The CFD results are highly visual and allow us to quickly identify strategies to fix these poor airflow areas and increase server temperature margin without increasing data center heat rejection rates, and saving the customer a significant amount of capital funds. One example shown here is a data center

analysis where the hot aisle airflow is not extracted effectively and re-circulates back towards the inlet side of the rack. This increases the inlet temperature of the servers located in that specific rack and cause those servers to operate with lower temperature margins. A simple solution was to increase the return airflow so as to extract more hot aisle air and the problem was solved without having to impact the temperature settings of the room.

If you have any questions regarding our capabilities, please visit our [website](#).



Data center analysis

Canadian SR&ED Tax Incentive Program

On a slightly different topic, I would like to discuss the Canadian SR&ED (Scientific Research and Experimental Development) tax incentive program. This program is administered by the Canadian government and encourages Canadian businesses of all sizes and in all sectors to conduct R&D in Canada. It is the largest single source of federal and provincial government support for industrial R&D. The SR&ED program gives claimants cash refunds and/or tax credits for their expenditures on eligible R&D work done in Canada. The program is an absolute

must for any entity conducting eligible R&D work in Canada. TDMG has undertaken a number of R&D programs over time and the benefits of these tax incentives really do go a long way. The actual incentives will depend on various parameters and in which province the R&D is conducted (as each province has its own incentives), but the rates can be as high as 60% - 70% for small businesses. The average SR&ED refund or tax credit is in the order of 35% of the cost of the R&D work including all business types and sizes. It is therefore

important to look into these incentives and take advantage of them as much as possible. It is possible to get loan approvals and guarantees on the basis of future SR&ED claims. This can be very helpful for funding R&D intensive programs in all industries. For more information you can go directly to the Canadian government's [website](#).



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Give Us Your Feedback

We're looking forward to getting some feedback from you on our newsletter and any questions you may have for us. Please feel free to visit us on our website and leave us your [comments](#) on our newsletter page. Thanks for your attention

and we look forward to the next issue of our newsletter where we will focus on more technical issues that may be of interest.



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