

Ionocom builds on founders' military experience

By Peter Caulfield, West Tech Report columnist



Prior to immigrating to Canada, entrepreneurs Nick Massey and Matthew Kendall garnered some invaluable experience working at the central research and development lab of a multinational defense contractor in Reading England. Taking part in a wide range of radio communication projects for military customers in Britain who demanded – and received – the very best products and service – provided the necessary experience that has enabled the two-man team to not only survive, but grow in the relatively small West Coast market.



Nick Massey, co-founder of Ionocom Communications

Thus, Ionocom Communications Inc. became the brainchild of Massey and Kendall, based in North Vancouver and now operating as a contract designer and developer of electronic products.

Ionocom stands for Ionospheric Communications. In 1999, Massey and Kendall were planning to design a small, rugged, high-frequency manpack radio for the mili-

tary. However, when they incorporated Ionocom in early 2000, they found that another local company already had a similar radio. They scrapped their plans for the radio and decided instead to set up a contract electronic design company. Since they had incorporated Ionocom they kept the name for their new business.

Ionocom focuses on circuit design and the design of printed circuit boards (pcb). It also writes embedded firmware and PC-based software. In addition, the firm works with industrial and mechanical design specialists when the latter's assistance is required. Massey says most of the projects Ionocom works on are designs intended for volume-manufacture where the company delivers a production-ready drawing package.

"Because of our background, Ionocom strives to produce not just high-quality designs but also manufacturable designs that are supported by high-quality manufacturing drawing sets and documentation," Massey says. Although they have worked in other areas, their background in low-power, hand-held and man-pack radio design permits Massey and Kendall to specialize in radio-based projects and low-power embedded electronics with a mixture of analog, digital and firmware functionality.

"It has been a good fit for the Lower Mainland and its strong wireless and alternative energy sectors," Massey says. Over the years Ionocom has developed good relationships with other local design companies.

"It is not uncommon for us to work alongside other design companies on different aspects of a product for the same client," Massey says. "Ionocom has [developed] a reputation for high-quality work with a strong attention to detail. That comes from [our] prior experience with the design of military equipment, where well-toleranced, reliable designs supported by detailed drawing sets are the norm." Most of Ionocom's customers are local companies. They have worked with a broad range of customers, from small start-ups to large multi-nationals.

"Some of our customers have no in-house expertise in electronics and are looking for advice in all areas of the design and manufacturing process," Massey says. "Others have specialist electronics teams but are looking for assistance to expedite particular projects." One customer is Surrey BC-based, EaglePicher Energy Products, which manufactures non-rechargeable lithium batteries that are used mainly for military and search-and-rescue applications. EaglePicher also has a medical battery division that builds lithium rechargeable and non-rechargeable batteries for implantable devices. Technical manager Maurice Brule says Ionocom designs and prototypes pcb assemblies for the electrical safety devices in military lithium batteries. Ionocom has also designed interface circuitry and intelligence for several of the military batteries.

"We've been working with them [since] 2001," Brule says. EaglePicher works with Ionocom for several reasons, he says, including a high level of professionalism, innovative solutions to design challenges, excellent documentation and JIT delivery.

G4S Justice Services Canada is another customer. Ionocom has been working for

10 years with G4S, a Surrey-based manufacturer of ankle bracelets for home incarceration of offenders. Director of technical operations Steve Rosset says Ionocom has completed all of the electronics development on the new projects and for the support of existing projects at G4S.

"They're a very professional operation," Rosset says. "They really know their stuff."

Massey says that one of the best aspects of contract design is the large variety of different projects he and Kendall get to work on. A sample of projects includes power-line communications; smart battery circuits for military batteries; guitar pickups and tone controls; wireless keyboards and mice; wireless asset tracking systems; fuel cell power regulator; embedded battery charger for hand-held radio; USB sound card; FM transmitters and docks for iPod; air-flow monitoring; uninterruptible power supply; sauna controls; Bluetooth peripherals; and automated production test systems.

Over the years the company has seen lots of changes. For example, radio communication designs that used to be complex circuits comprising many discrete components are now single-chip solutions. This simplification has led – unexpectedly, Massey says – to more work for the company because wireless solutions are being incorporated into many new types of products and designers are seeking expert assistance with the RF aspects. Ionocom has also been affected by changes in the consumer electronics market. One of Ionocom's first contracts was for the design of a wireless keyboard for the Palm Pilot PDA.

For more information on Ionocom, visit www.ionocom.com

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